You see his form and yeare, but if you would
view his just Soule (which envy can't behold)
In to his work & following tractate looke
The lively picture of his minde & booke

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view his just Soule (which envy can't behold)
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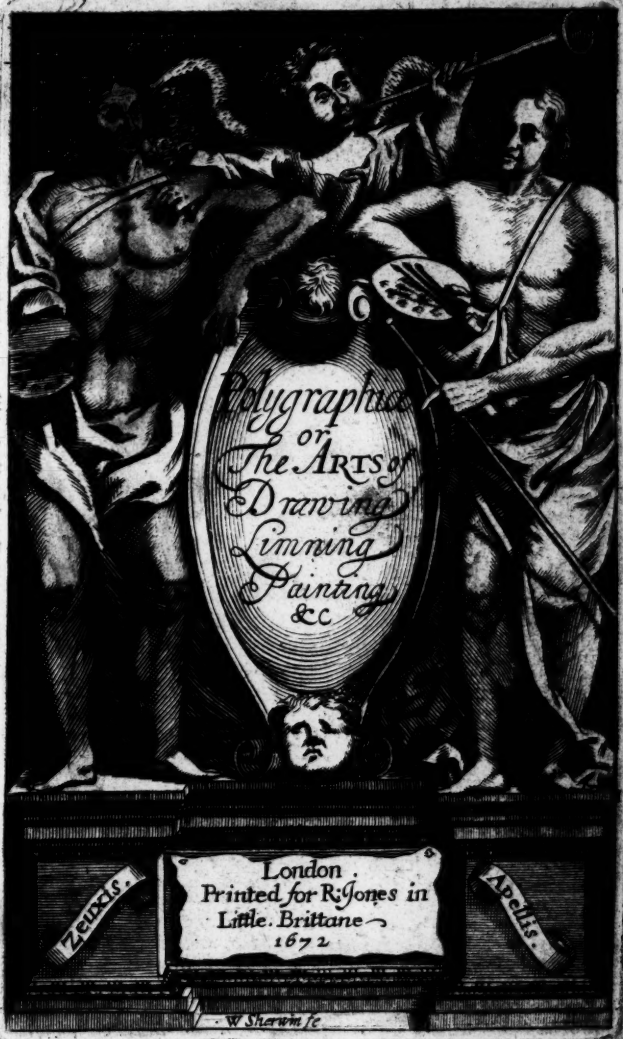
Polygraphice
or
The Arts of
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Zeuxis.
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London
Printed for R: Jones in
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1672
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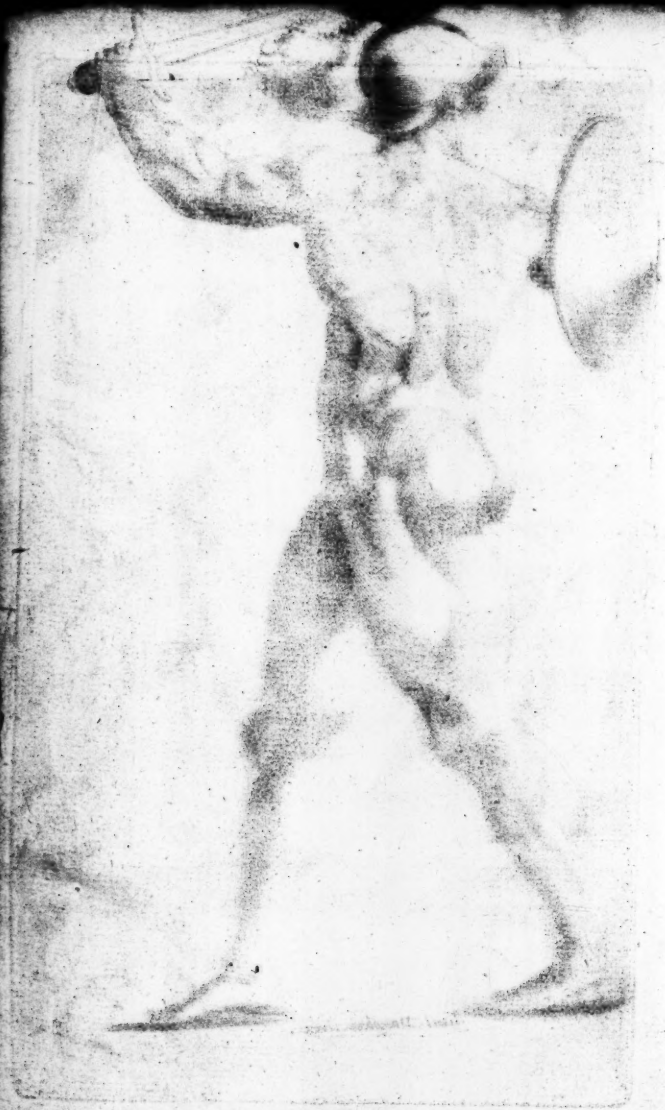


POLYGRAPHICE;

OR

The Arts of Drawing, Engraving, Etching, Limning, Painting, Washing, Varnishing, Gilding, Colouring, Dying, Beautifying and Perfuming.

IN FOUR BOOKS.

Exemplifyed, in the *Drawing of Men, Women, Landskips, Countries*, and Figures of various forms; The way of *Engraving, Etching* and *Limning*, with all their Requisites and Ornaments; The *Depicting of the most eminent Pieces of Antiquities*; The *Paintings of the Antients*; *Washing* of Maps, Globes, or Pictures; The *Dying* of Cloth, Silk, Horns, Bones, Wood, Glass, Stones, and Metals; The *Varnishing, Colouring* and *Gilding* thereof, according to any purpose or intent; The *Painting, Colouring* and *Beautifying* of the Face, Skin and Hair; The *whole Doctrine of Perfumes* (never published till now) together with the *Original, Advancement* and *Perfection* of the Art of Painting.

The Second Edition, with many large Additions. Adorned with Sculptures: The like never yet extant.

By *WILLIAM SALMON* Φιλαλήθης.

Marcel. Palin. lib. 8.
Genus est absque ordine nullum.

London, Printed by *E. T.* and *R. H.* for *R. Jones*, at the Sign of the *Golden Lyon* in *Little Britain*. 1673.

To the Right Honourable

HENRY

Lord HOWARD, Earl OF *NORWICH*, EARL Marſhal of ENGLAND.

My LORD,

THE Art of Painting was a thing which of old *Princes* admired, *Kings* did affect, *Emperors* and *Noble* men of almoſt all Ages did love and make uſe of. Not to mention *Juba Rex Mauritaniæ*, *Perſeus* King of *Macedonia*, King *Demetrius*, *Cyrus* King of *Perſia*, *Alexander* the Great, *Cæſar*, and others: How was *Tiberius* the Emperor taken with the Archigallus of *Parrhaſius*, and the ſtatue which *Lyſippus* made? How highly

did *Mnaſon* the Tyrant of the *Eleateuſes* prize the pictures of the *Thebean* battel done by *Ariſtides*? How did King *Nicomedes*, who proffered an unknown ſumm of money to the *Gnidians*, for the *Venus* which *Praxiteles* made, admire it? What eſtimation had *Marcus Agrippa* for it, who offered vaſt ſumms to the inhabitants of *Cyzicus* for the two pictures of *Ajax* and *Venus*? Beſides many others too tedious here to be recited, and ſufficiently enough known to your Lordſhip, of which to make any repetition might be accounted preſumption, eſpecially to your *Honour*, whoſe Skill in Art is large, and whoſe Knowledge of Univerſal Learning is not ſmall, eſpecially in that of *Hiſtory*. It is Honour, as *Cicero* ſaith, which gives Being, Life and Nouriſhment to Arts, and where can that be found more than in your Noble Self? Preſuming therefore of your Lordſhips Affection, and that Unparallel'd Vertue, and Heroick Spirit, which not only lodges in your Honours Breaſt, but is alſo Hereditary to your *Noble Family*, I have made bold to ſhelter this work under your Lordſhips *Patronage*; expecting either to ſee it live in your *Honours* Eſtimation, or periſh in your diſlike. Now if theſe *Lucubrations* of mine, obtain but ſo much as your *Honours* leaſt Approbation, I ſhall think my ſelf Happy; and hope, that with

your

your *Name* and *Memory*, this work may be conſecrated to Eternity. May your *Lordſhip* daily increaſe in *Honour* and *Glory*, be repleniſhed with all *earthly Bleſſings*, and for ever enjoy the full fruition of all *Happineſs* both in this *World*, and that which is *to come*, is the Prayer of

MY LORD,

Your Honours moſt Humble and

Affectionate Servant,

William Salmon.

THE PREFACE TO THE READER.

THe Subject of the enſueing work is the Art of Painting: a name not only too ſingular; but alſo too ſhort or narrow, to expreſs what is here intended thereby: For we do not only expreſs that Art, (as it is generally received) but alſo Drawing, Engraving, Etching, Limning, Waſhing, Colouring and Dying; all which being conſidered in their proper extent, infinitely exceed that curtail'd name of Painting; which that we might join all in one proper and comprehenſive word, we made choice of that Greek Compound POLYGRAPHICE.

To perſwade any one to the ſtudy or practice of this Art, would be a great folly; ſince Ignorance (which is always blind) can never be able to judge aright: For to him that already underſtands it, the labour would be uſeleſs and unprofitable; to him which is already delighted therein, it would be needleſs and ſuperfluous; and to the Averſe and Ignorant, it would be the putting a Jewel into a Swines ſnout: the exquiſite knowledge of which is impoſſible ever to be attained

or underſtood, by ſuch prejudicate and cloudy Souls, although it is ſufficiently known to many already; and its uſefulneſs as apparent as it is excellent: To enumerate the one, or rehearſe the other, is but to perſwade the world, that it is day-light when the Sun is upon the Meridian; *or at leaſt to inculcate,* an ignorance of thoſe things, *which have been* manifeſtly known *even a long time ſince.*

The Method of this work is wholly new, wherein we have united and made one, ſuch various ſubjects, as have been the uncertain, obſcure and tedious diſcourſe of a great number of various and large Volumes. What ſhall we ſay? *things far aſunder,* we have laid together: *things uncertain,* are here limited and reduced: *things obſcure,* we have made plain: *things tedious,* we have made ſhort: *things erroneous,* we have rectified and corrected: *things hard,* we have made facil and eaſie: *things various,* we have collected: *things (in appearance) heterogene,* we have made homogene: *And in in a word, the whole Art* we have reduced to certain heads; *brought under* a certain method; *limited to* practical rules; *and made it* perſpicuous, *even to a very mean underſtanding.*

In the Compoſure of this work (beſides our own Obſervations) we have made uſe of the beſt Authors *now Extant, that we could poſſibly procure, or get into our hands; wherein our labour was not ſmall; what in* Reading, Comparing, Tranſcribing, Chooſing, Correcting, Diſpoſing, *and* Reviſing *every thing, in reſpect of* Matter, Form, *and* Order. *The which had we any* Preſident *to have followed; any* Path *to have traced; any* Example *to have imitated; any* Help *to have conſulted; or any* Subject *entire: Or otherwiſe, had the* Number *of our Authors been ſmall; their* Maxims, *truths; their* Rules, *certain; their* Meanings *not obſcure; or their* Precepts *been reduced to Method and Order: We might not only, with*

with much more *eaſe, pleaſure, and certainty*; leſs *labour, trouble, and pains*; greater *perſpicuity, plainneſs and ſingularity*; better *order, method, and language*; *but alſo* in ſhorter time *have brought to perfection, what we here preſent you withal.*

In this ſecond Edition we have not only inſerted ſeveral Copper Cuts, *with more than* two hundred *ſeveral additions of ſingular uſe, through the three firſt books*; *but there is alſo a whole fourth book, containing above threeſcore Chapters of ſuch neceſſary matter, that the work without them may really be accounted* defective. *'Tis true, ſome things are not only immethodically diſpoſed (by reaſon this latter part was not intended at the reprinting hereof till afterwards, upon more mature and deliberate conſideration) but alſo much out of Order; yet we thought better to have them* out of Order, *than* out of the Book. *There is not only ſeveral neceſſary things added (which were omitted in the three firſt books;) as alſo the various depicturings of the Antients, according to the cuſtom of every nation, drawn from the beſt, moſt experienced and faithfulleſt Authors now extant, (whether* Engliſh, Italian *or* Latin) *but alſo the various ways of Painting, Beautifying and Adorning the Face and Skin, ſo artificially, as it ſhall be imperceptible to the ſcrutiny of the moſt curious and piercing eye: to which we have added (as a neceſſary Appendice)* the whole doctrine of Perfumes, *never written on (to our knowledge) in this order before; together with the* Original, Advancement *and* Perfection *of theſe Arts.*

Laſtly, the Reader is deſired to take notice, that in this following work, there are many excellent ſecrets, not vulgarly known, which fell into our hands from ſeveral ſpecial friends, (whoſe exquiſite knowledge in theſe kinds of Myſteries doth truly declare them to be abſolute Maſters thereof) which for the publick good are freely communicated to the world.

William Salmon.

POLYGRAPHICES

LIBER PRIMUS.

OF

DRAWING.

CHAP. I.

Of Polygraphice in General.

I. *Polygraphice* is an Art, ſo much imitating Nature, as that by proportional lines with anſwerable Colours, it teacheth to repreſent to the life (and that *in plano*) the forms of all corporeal things, with their reſpective paſſions.

II. It is called, in general, in Greek χρωματικὴ, in Latin *Pictura*, and in Engliſh the *Art of Painting*.

III. It is ſevenfold (to wit) in *Drawing*, *Engraving*, *Etching*, *Limning*, *Painting*, *Waſhing* and *Colouring*.

IV. *Drawing* is, that whereby we repreſent the ſhape and form of any corporeal ſubſtance in rude lines only.

V. It consists in proportion and passion, as it hath relation to motion and situation, in respect of Light and Vision.

VI. *Sanderson* saith, This Admirable Art, is the Imitation of the surface of Nature in Colour and Proportion, 1. By Mathematical demonstration, 2. By Chorographical description, 3. By shapes of Living creatures, 4. And by the forms of Vegetables; in all which it prefers Likeness to the life, conserves it after death, and this altogether by the Sense of Seeing.

VII. The *proportion* shews the true length, breadth or bigness of any part (in Known measures) in respect of the whole, and how they bear one to another: The *passion* represents the Visual Quality, in respect of love or hatred, sorrow or joy, magnanimity or cowardise, majesty or humility; of all which things we shall speak in order.

CHAP. II.

Of the Instruments of Drawing.

I. THe *Instruments* of Drawing are sevenfold, *viz.* Charcoals, feathers of a Ducks-wing, black and red Lead pencils, pens made of Ravens quils, Rulers, Compasses, and Pastils.

II. *Charcoals* are to be chosen of Sallow-wood split into the form of pencils, and sharpened to a point, being chiefly known by their pith in the middle.

Their use is to draw lightly the draught over at first, that if any thing be drawn amiss it may be wiped out and amended.

III. The *feathers* ought to be of a Ducks-wing, (though

(though others may ſerve well enough) with which you may wipe out any ſtroak of the Charcoal where it is drawn amiſs, leſt variety of Lines breed confuſion.

IV. *Black and red Lead pencils*, are to go over your draught the ſecond time more exactly, becauſe this will not wipe out with your hand, when you come to draw it over with the pen.

V. *Pens* made of Ravens quills (but others may ſerve) are to finiſh the work: but herein you muſt be very careful and exact, for what is now done amiſs there is no altering of.

VI. The *Rulers*, which are of uſe to draw ſtraight or perpendicular lines, triangles, ſquares or polygons, the which you are to uſe in the beginning, till practice and experience may render them needleſs.

VII. *Compaſſes* made of fine Braſs with Steel points, to take in and out, that you may uſe black or red Lead at pleaſure.

Their uſe is firſt to meaſure (by help of a curious ſcale of equal parts upon the edge of your Ruler) your proportions, and whether your work is exact which is done with the Charcoal. Secondly, to draw Circles, Ovals, and Arches withal.

VIII. *Paſtils* are made of ſeveral Colours to draw withal, upon coloured paper or parchment, Thus,

Take Plaiſter of Paris or Alabaſter calcined, of the colour of which you intend to make your paſtils with, ana q. ſ. *grind them firſt aſunder, then together, and with a little water make them into paſte, then with your hands roul them into long pieces like black-lead pencils, then drie them moderately in the Air: being dryed, when you uſe them, ſcrape them to a point like an ordinary pencil.*

And thus may you make paſtils of what colour you pleaſe, fitting them for the *faces of Men or Women,*

men, Land-skips, Clouds, Sun-beams, Buildings and ſhadows.

IX. To the former add good Copies, Patterns, and Examples of good Pictures, and other draughts, without which it is almoſt impoſſible, that the young Artiſt ſhould ever attain to any perfection in this Art.

Thoſe that deſire to be furniſhed with any excellent Patterns, Copies or Prints, may have of all ſorts, whether of Humane ſhape, Perſpective deſign, Land-skip, Fowls, Beaſts, Fiſhes, Inſects, Plants, Countries, or any other Artificial figures, exquiſitely drawn, at very reaſonable rates, where this Book is to be ſold.

CHAP. III.

Of the precepts of Drawing in General.

I. BE ſure to have all the neceſſaries aforeſaid in readineſs, but it will be good to practiſe as much as may be without the help of your Rule and Compaſſes; it is your eye and fantie muſt judge without artificial meaſurings.

II. *Then firſt begin with plain Geometrical figures*, as Lines, Angles, Triangles, Quadrangles, Polygons, Arches, Circles, Ovals, Cones, Cylinders and the like. For theſe are the foundations of all other proportions.

III. The *Circle* helps in all orbicular forms, as in the Sun, Moon, &c. the *Oval* in giving a juſt proportion to the face and mouth; the mouth of a Pot or Well, the foot of a Glaſs, &c. the *Squars* confines the Picture you

you are to Copy, &c. the *Triangle* in the half-face; the *Polygone* in Ground-plats, Fortifications, and the like; *Angles* and *Arches* in Perſpective; the *Cone* in Spires-tops of Towers and Steeples: the *Cylinder* in Columns, Pillars, Pilaſters, and their Ornaments.

IV. Having made your hand fit and ready in General proportions, then learn to give every object its due ſhade according to its convexity or concavity, and to elevate or depreſs the ſame, as the object appears either nearer or farther off the light, the which is indeed the life of the work.

V. *The ſecond practice of drawing* conſiſts in forming *fruits*, as Apples, Pears, Cherries, Peaches, Grapes, Strawberries, Peaſcods, &c. with their *leaves*: the imitation of *flowers*, as Roſes, Tulips, Carnations, &c. *Herbs*, as Roſemary, Tyme, Hyſop, &c. *Trees*, as the Oak Fir, Aſh, Wallnut, &c.

VI. *The third practice of Drawing imitates*, 1. *Beaſts*, as the Lamb, Elephant, Lion, Bear, Leopard, Dog, Cat, Buck, Unicorn, Horſe, &c. 2. *Fowls*, as the Eagle, Swan, Parrot, Partridge, Dove, Raven, &c. 3. *Fiſhes*, as the Whale, Herring, Pike, Carp, Thornback, Lobſter, Crab, &c. *of which, variety of Prints may be bought at reaſonable rates.*

VII. *The fourth praxis imitates* the body of Man with all its Lineaments, the Head, Noſe, Eyes, Ears, Cheeks, hands, Arms, and ſhadows all exactly proportional both to the whole, and one to another, as well to ſituation as Magnitude.

VIII. *The fifth praxis is in* Drapery, imitating Cloathing, and Artificially ſetting off the outward Coverings, Habit and Ornaments of the Body, as Cloth, Stuff, Silk and Linnen, their natural and proper folds; which although it may ſeem ſomething hard to do, yet by much exerciſe and imitation of the

choiceſt Prints, will become facil and eaſie.

IX. In drawing of all the aforegoing forms, or what ever elſe, you muſt be perfect, firſt in the exact proportions: ſecondly in the general or outward lines, before you fall to ſhadowing or trimming your work within.

X. In mixed and uncertain forms, where Circle and Square will do no good (but only the *Idea* thereof in your own fanſie) as in Lions, Horſes, and the like; you muſt work by reaſon in your own judgment, and ſo obtain the true proportion by daily practice. *Thus*;

Having the ſhape of the thing in your mind, firſt draw it rudely with your coal, then more exactly with your lead or pencil; then peruſe it well, and conſider where you have erred, and mend it, according to that Idea, *which you carry in your mind; this done, view it again, correcting by degrees the other parts, even to the leaſt* Jota, *ſo far as your judgment will inform you; and this you may do with twenty, thirty, forty or more papers of ſeveral things at once: having done what you can, confer it with ſome excellent pattern or print of like kind, uſing no rule or compaſs at all, but your own reaſon, in mending every fault, giving every thing its due place, and juſt proportion; by this means you may rectifie all your errors, and ſtep an Incredible way on to perfection.*

CHAP.

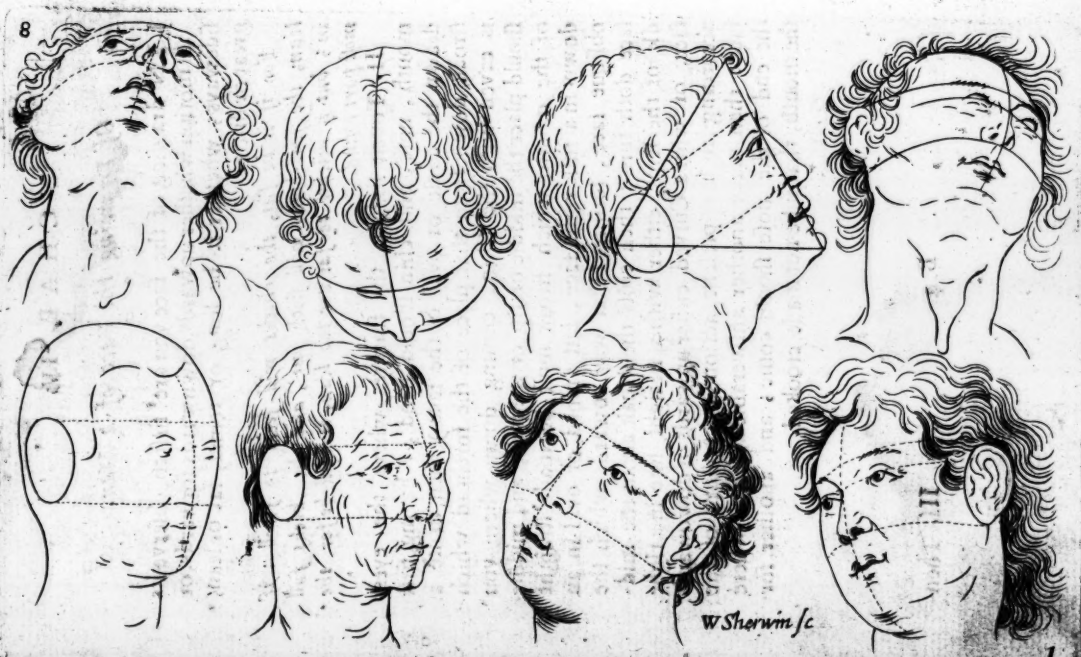
CHAP. IV.

Of Drawing the Face of a Man.

I. IN drawing of the face you are firſt to obſerve its motion whether upwards, downwards, forwards, or ſideways; whether it be long or round, fat or lean, great or little.

For if it be fat, the cheeks will ſeem to ſwell: if lean, the jaw-bones will ſtick out, and the cheeks fall in; but if neither too fat nor too lean, it will be for the moſt part round.

II. Touch lightly the features where the eyes, mouth, noſe, and chin ſhould ſtand, (having firſt drawn the circle or oval of the face) then make a ſtroak down from that place of the forehead which is even with the Chin, coming down where you ſhould place the middle or tip of the noſe, and middle of the mouth, which ſtroak muſt be made ſtraight down in a full right face, but arched or oval in an oblique face, leaning that way towards which the face doth turn: then croſs the ſtroak about the middle of the Eyes, either with a ſtraight line in a right face, or with a Curved either upwards or downwards according to the preſent action or poſture of the face: then make another anſwerable to that, where the end of the noſe ſhould come; and another for the mouth, that it be not made crooked.

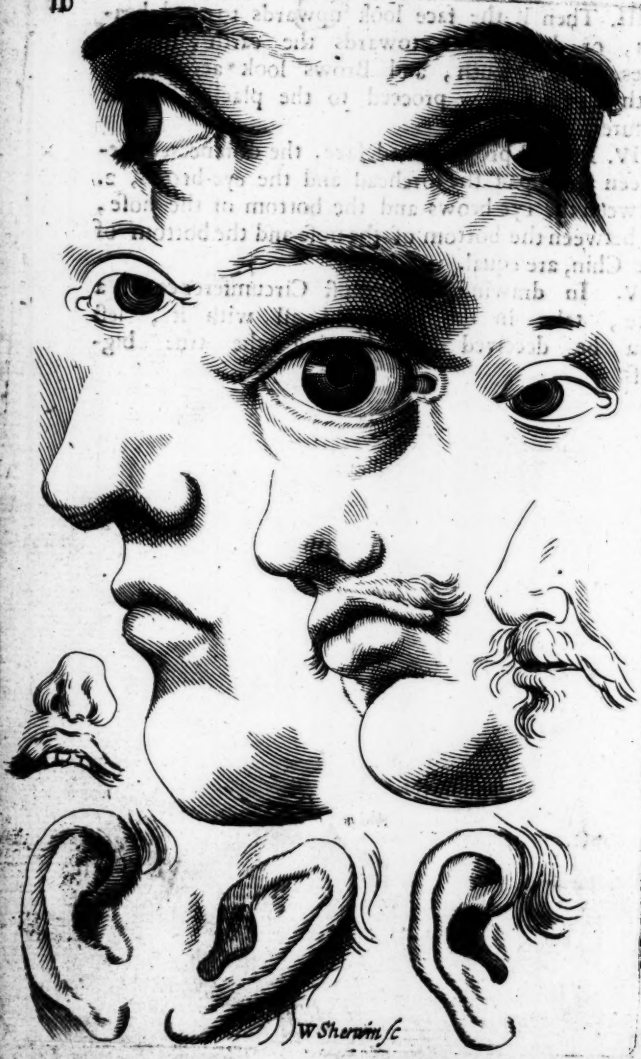

W Sherwin sc

III. Then if the face look upwards toward heaven, or downwards towards the earth, let the Eyes, Noſe, Mouth, and Brows look accordingly with it; and now proceed to the placing of the features.

IV. In a juſt proportioned face, the diſtances, 1. between the top of the forehead and the eye-brows, 2. between the eye-brows and the bottom of the noſe, 3. between the bottom of the noſe and the bottom of the Chin, are equal.

V. In drawing the utmoſt Circumference of a face, take in the head and all with it, leſt you be deceived in drawing the true bigneſs.

VI. Then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VI. Then conſider all thoſe chief touches which give life to a face, adding grace thereto, and ſomething diſcovering the diſpoſition of the mind.

So the mouth extended and the corners a little turning up, ſhews a ſmiling countenance: the eye-brow bending, and the forehead and top of the noſe between the eye-brows wrinkled, ſhews one frowning: the upper eye-lid coming ſomething over the ball of the eye, ſhews one ſober and ſtayed: with many other touches which give life and ſpirit to a face, which in good paints, by little and little, and diligent obſervation you will at laſt find out.

VII. The diſtances between the eyes, is the length of one eye in a full face, but in a three-quarted or half-face, it is leſſened proportionably: and exactly underneath the corners of the eyes, place the noſtrils.

VIII. Having given touches where the eyes, noſe, mouth and chin ſhould be placed, begin to draw them more exactly, and ſo proceed till the face be finiſhed; and then make the hair, beard, ſhadows, and other things about it.

W Sherwin sc

IX. Be ſure to make the ſhadows rightly, and be ſure not to make them too dark, where they ſhould be faint; for that can never be made light again, and ſo the whole face is marr'd.

The ſhadows are fainter and lighter in a fair face than in a ſwarthy.

X. When you have finiſhed the face, give here and there ſome hard touches with your pen where the ſhadows are darkeſt; then come the ears and hair, wherein, having drawn the out-line, draw the principal curls, or maſter ſtroaks in the hair, which will be a guide to you in the leſſer curls, whoſe dependance are on them: always make the curls to bend exactly according to the pattern, that they may lie looſe, or careleſly, and not as if they were ſtiff and forced; the curls being rightly drawn, in the laſt place ſtrike in the looſe hairs which hang ſcatteringly out of the Circles.

XI. In forming the Ear, deſcribe an Oval as it were, and proceeding lightly, joyn ſtroak to ſtroak, in ſuch manner as you ſee in the Figures; ſo that the ear may be entirely formed, without digreſſing from the bounds of Nature or Art.

XII. Laſtly, having practiſed a little by rule, and brought your hand in; in drawing of any thing, firſt ſtrike the out-ſtroaks, principal veins, and muſcles lightly, and afterwards ſhadow them, ever following exquiſite patterns and prints, which will both encreaſe your judgment, and bring command to your hand.

CHAP.

W Sherwm fe

CHAP. V.

Of the Extreme parts.

I. IN drawing the hands, draw not all the joints, veins or other things to appear plainly, but only lightly and faintly, and ſtrike out the bigneſs of the hand, and the manner of its turning with faint touches, and not with hard ſtrokes; then that being done right, part the fingers according to the pattern with like faint ſtroaks; then mark that place where any of the fingers do ſtand out from the others, with a faint reſemblance: this done, proceed to draw it more perfectly, making the bending of the joints, the wriſts and other principal things more exactly; and laſtly, go over with it again, drawing every ſmall bending or ſwelling of the fingers, nails, knuckles and veins, ſo many as do appear.

II. Learn by good prints the juſt proportions of the hands, with their equal diſtances; obſerving this rule, that according as it turns one way or another, to ſhorten proportionally as they appear to the eye.

For ſo much as it turns away from our eye, ſo much it loſes in proportion, yea ſometimes a whole finger, two or three or more is loſt to our ſight, which you muſt accordingly anſwer in your draught.

III. In drawing of the feet, the ſame rules which we even now enumerated, at the firſt and ſecond Section of this Chapter, are to be underſtood here.

CHAP.

W Sherwin fe.

W Sherwin sc

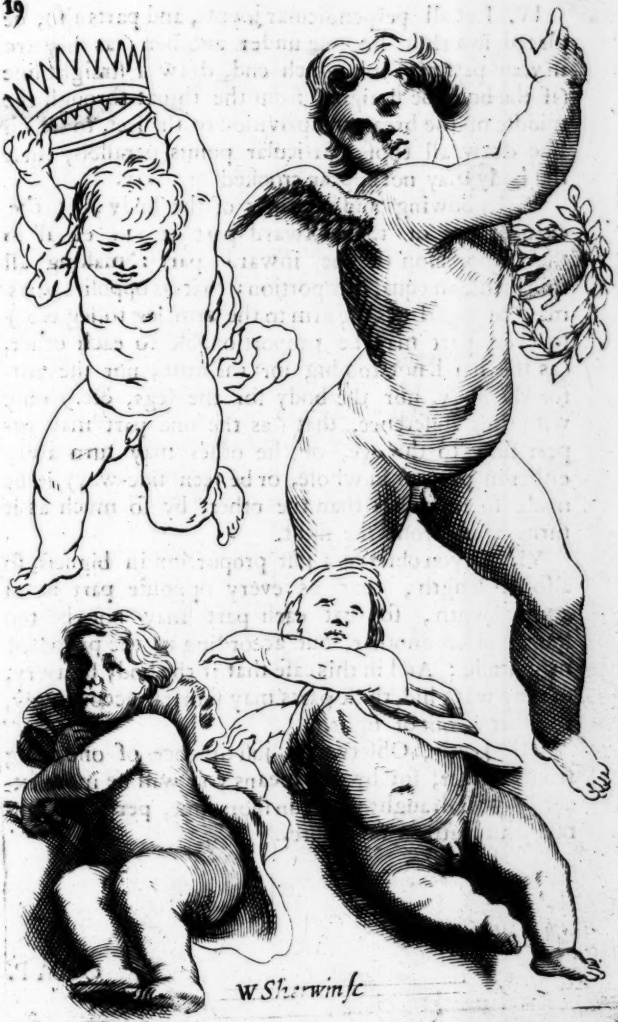
CHAP. VI.

Of Drawing the whole Body.

I. FIrſt begin with the head, and be ſure to give it its juſt proportion, anſwerable to what you intend the whole body ſhall be; then draw the ſhoulders in their exact breadth; after them, the trunk of the body: beginning at the Arm-pits, and ſo drawing down to the Hips on both ſides, obſerving withal the exact breadth of the Waſte; Laſtly, draw the legs, arms and hands, exactly to your pattern.

II. But firſt draw with a coal, and that very lightly and faintly, drawing nothing perfect (that you may the eaſier mend it if it be amiſs) and then afterwards finiſh one thing after another as curiouſly as you can.

III. Let the parallel ſinews, muſcles, veins and joints, be placed oppoſite one to another in a ſtraight line (as ſhoulder to ſhoulder, hip to hip, knee to knee, &c.) for which purpoſe draw ſtraight croſs lines to guide you therein; obſerving that which way ſoever the body turns or bows, theſe lines may anſwer accordingly.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IV. Let all perpendicular joynts, and parts alſo, be placed in a right line one under another (as they are in your pattern) for which end, draw a ſtraight line (if the body be ſtraight) from the throat through the middle of the breaſt and privities; to the feet, to which line draw all thoſe particular points parallels, that the body may not appear crooked or awry.

V. In bowings and bendings of the body, let the extuberance of the outward part be juſt equal to the compreſſion of the inward part: making all things of an equal proportion; that as oppoſite parts may be equal (as the arm to the arm, leg to leg, &c.) ſo every part may be proportionable to each other, (as the hand not too big for the arm, nor the arm for the body, nor the body for the legs, &c.) only with this difference, that (as the one part may appear fully to the eye, or the other may turn away either in part, or in whole, or be ſeen ſide-way) it be made ſo much leſs than the other, by ſo much as it turns away from the ſight.

VI. As you obſerve a juſt proportion in bigneſs, ſo alſo in length, that as every oppoſite part be of equal length, ſo that each part may not be too long one for another, but according to the propoſed magnitude: And in this caſe that if the body be awry, or any ways hid, thoſe parts may ſhorten accordingly, to what is out of ſight.

VII. Laſtly, Obſerve the juſt diſtance of one thing from another, for by that means you will be more exact in your draught; and, in ſhort time, perfectly imitate your pattern or nature.

CHAP.

CHAP. VII.

Of Drawing a Naked Body.

I. IN drawing after the life, as there are variety of faces, ſo no certain Rules can be delivered for the ſame; yet the following precautions may be uſeful.

II. Draw out the head in an Oval, one fourth part for the hair; one fourth part for the forehead and brows; one fourth for the noſe; and the laſt for the mouth and chin.

III. Having drawn out the head, meaſure out eight times the length of the head (the head making one of the eight parts) and draw a ſtraight line from the top of the head to the ſole of the foot.

IV. One heads length from the chin is for the breaſt; the next eighth part reacheth to the navel; the fourth part to the privities; the fifth part to the middle of the thigh; the ſixth part to the lower part of the knee; the ſeventh to the ſmall of the leg; and the eighth part to the heel.

V. The muſcles you muſt obſerve to draw exactly as they are in the life: the breadth of the ſhoulders, is about two meaſures of the head: the breadth of the hips, two meaſures of the face: the arms ſtretched out, are juſt the length of the whole figure, the breaſts alſo accounted; but without the breaſts they are but ſix.

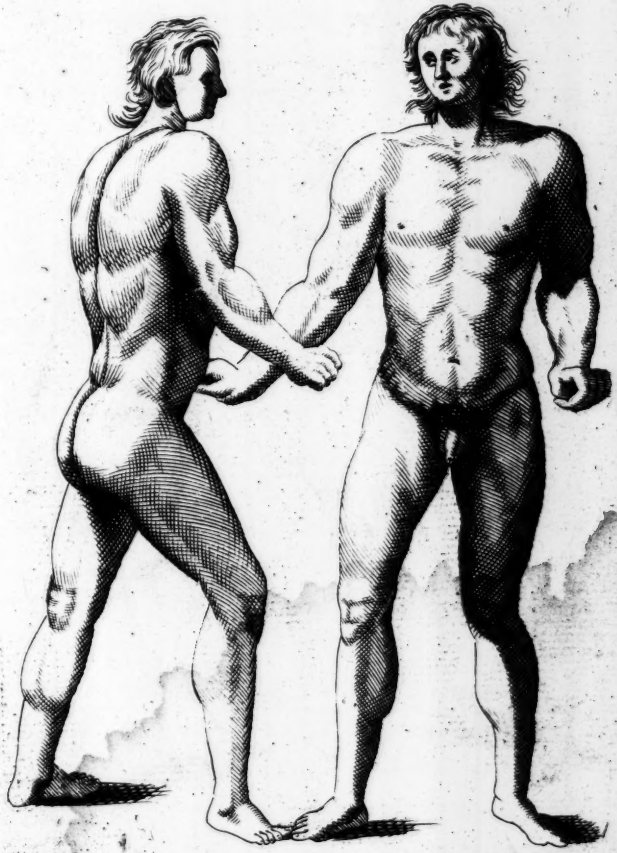
VI. The arms hanging ſtraight down reach within a ſpan of the knee: the length of the hand is the juſt length of the face. See the two figures following.

VII. Obſerve firſt to draw the head exactly, and next, the ſhoulders in their juſt breadth : then draw the trunk of the Body, and the reſt as at the firſt Section of the ſixth Chapter.

VIII. Be ſure to place the joints, ſinews, and muſcles in their natural places, and alſo proportionally, in reſpect of Magnitude, Similitude, and Parts : leſt it ſeem crooked and deformed.

IX. See that every parallel joint bend moderately, ſo as to anſwer in nature its oppoſite.

CHAP.



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CHAP. VIII.

Of Shadowing a Naked Body.

I. THe ſhadows of the neck, in a child or young woman, are very fine, rare, and hard to be ſeen: In a man, the ſinews and veins are expreſſed by ſhadowing of the reſt of the neck, and leaving them white: the ſhoulder is ſhadowed underneath: the brawn of the arm muſt appear full and white, ſhadowed on one ſide.

II. The veins of the back of the hand, and the knuckles are made with two or three hair ſtroaks with a fine touch of the pen.

III. The paps of a man are ſhewed by two or three ſtroaks given underneath: in a woman with an orbicular ſhade, ſomewhat deep; the ribs retain no ſhadow, except you repreſent one lean or ſtarved.

IV. The belly is made eminent by ſhadowing underneath the breaſt bone and the flank: The brawn of the thigh is ſhadowed by drawing ſmall hair ſtroaks from the hip to the knee, and croſſed again overthwartly.

V. The knee is to be finely ſhadowed underneath the joint; the ſhin-bone appears by ſhadowing one half of the leg with a ſingle ſhadow.

VI. The ankle-bone appears by ſhadowing a little underneath (as in the knees) and the ſinews thereof muſt ſeem to take beginning from the midſt of the foot; and to wax bigger as they grow nearer to the toes.

VII. Laſtly, the ſhadows of the foot muſt take place according as reaſon and occaſion requires, for which (as alſo in all the former precepts) the having of good prints will be no ſmall advantage unto you.

CHAP. IX.

The way and manner of Shadowing.

I. IF it be a ſurface only it is beſt ſhadowed by drawing lines (either ſtraight or oblique, according as the ſuperficies is) through the better half thereof.

II. If it be in a body, it is a double ſhadow, and is uſed when a ſuperficies begins to forſake your ſight, as in Columns and Pillars, where it is double darkned, and repreſenteth to the eye, as it were the backſide, leaving that unſhadowed to the light.

III. The treble ſhadow is made by croſſing over again the double ſhadow, and is uſed for the inward parts of things, as in clefts of the earth, wells, caves, the inſides of pots, cups and diſhes.

IV. In

IV. In ſhadowing, let the ſhadow always fall one way, that is, on the ſame ſide of the body; leaving the other to the light.

So in drawing a man, if I begin to ſhadow his right cheek, I muſt ſhadow the right part of his neck, arm, ſide, thigh, leg, &c.

V. But if the light ſide of the body be darkned by the oppoſition of ſome other body ſtanding between the light and it, it muſt receive a contrary ſhadow according as the light is obfuſcated.

So if three pillars ſtand together, that in the midſt muſt receive a ſhadow on both ſides.

VI. All circular bodies muſt have a circular ſhadow (by the firſt Section of this Chapter) according to their form or appearance, and the orbicular ſhadow of the object which caſteth it.

VII. Let your ſhadow grow fainter and fainter, according to the greatneſs of the diſtance from the opacous Body ſhadowing.

And the reaſon is, becauſe all ſhadows are pyramidal, in which caſe, ſpace of place prevails with the light againſt the ſhadow.

VIII Where contrary ſhadows concurr, let the meaneſt and moſt ſolid body be firſt ſerved; and in double and treble ſhadows, let the firſt lines be very dry for fear of blotting, before you croſs them.

IX. All perfect lights receive no ſhadow at all; but being manifeſt, are only to be made apparent by that body which receives them; whoſe ſhadow muſt be according to the efflux of light: but the colour of the light ought to agree with the medium which receives it, whether it be Air, Cryſtal, Water, Amber, Glaſs, Tranſparent-wine, or the like.

CHAP.

CHAP. X.

Of Expreſſing Paſſions in the Countenance.

I. *Love* is expreſſed by a clear, fair and pleaſant Countenance, without clouds, wrinkles, or unpleaſant bendings: giving the forehead an ample height and breadth with majeſtick grace; a full eye with a fine ſhadow at the bottom of the eye-lid, and a little at the corner: a proportionable noſe; noſtrils not too wide: a clear cheek made by ſhadowing of it on one ſide: and a ſmiling mouth made by a thin upper lip, and ſhadowing the mouth-line at the corners.

II. *Fear* is expreſſed by making the eyes look hollow, heavie and downward, thin faln cheeks, cloſe mouth, and ſtaring careleſs hair about the ears.

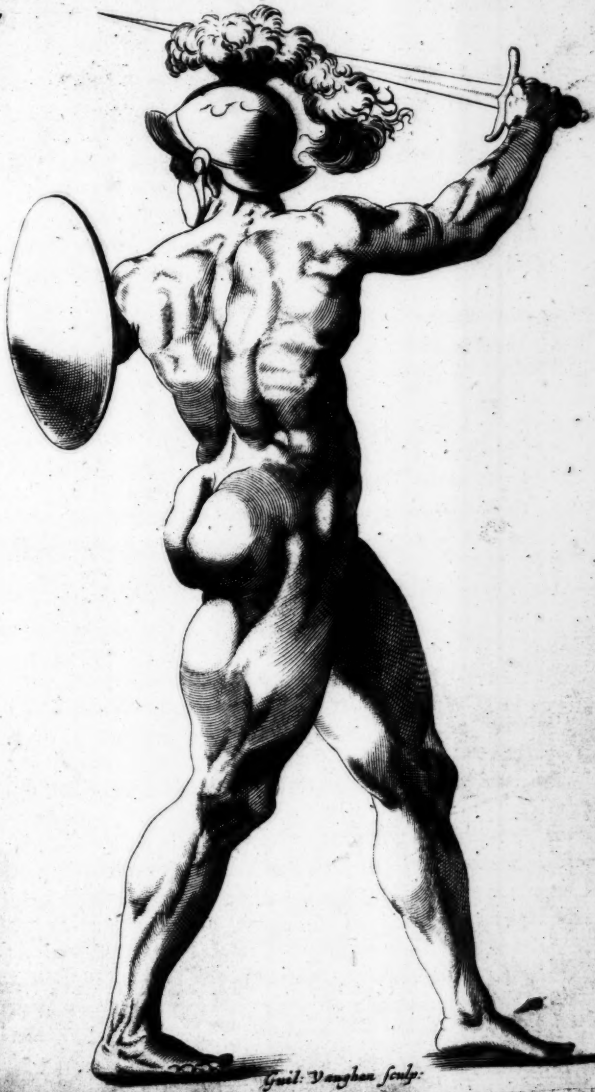
III. *Envie* is beſt decyphred by the only hanging of the cheeks, and a pale countenance; and ſometimes by grinning of the teeth.

IV. Let every paſſion be repreſented according to the outward appearance thereof, as it is in thoſe perſons in whom it reigns; obſerving the rules at the ſixth Section of the fourth Chapter.

CHAP. XI.

Of Humane proportion.

I. THE length of an upright body is equal to eight times the length of the face or head: The arm hanging ſtraight down, reacheth within a ſpan of the Knee: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Knee: The length of the hand muſt be the length of the face: The arms extended muſt be the juſt length of the body.

II. Thoſe parts of the body near to the Eye muſt be made greater and longer than thoſe farther off, (becauſe the eye judgeth ſo of them) and according to the diſtance from the eye, ſo muſt you vary from that which is otherwiſe the real true proportion of thoſe parts.

III. In foreſhortning you muſt take things as they appear to the eye, and not to draw the full proportion of each part, but to ſhorten all, according to the rate or reaſon which is obſcured.

So if you would draw a ſhip foreright, there can appear but only her forepart (for the reſt being hid cannot be expreſt:) the like of an horſe looking full in my face, or a man lying along; I muſt here of neceſſity foreſhorten, to expreſs the Viſual property: And in this caſe your eye and reaſon muſt be your chief guide to give the true reaſon and meaſure of theſe appearances, whether in Drawing, Limning or Painting.

IV. The uſe of this foreſhortning is to expreſs all manner of actions in man or beaſt; to repreſent many things in a little room; to ſhew at one view to the eye and mind, the whole body of a temple, with all its arches and pillars whether the inſide or outſide, as alſo the ſundry ſides of Cities, Caſtles and Forts, and ſuch like.

Laſtly, That in every caſe you make Nature the pattern of all draughts, ſo that nothing be expreſt, but what doth agree and accord with nature; and that nothing be either forced beyond nature, nor yet any thing to come ſhort of nature.

As if in drawing the picture of a man, be ſure you draw not ſuch a poſture as is impoſſible for him to imitate with his natural body.

CHAP.

CHAP. XII.

Of Drapery.

I. DRaw the out-lines of the Garment lightly, and herein be careful, for the whole grace of the picture lies there; then draw the greateſt folds firſt, and ſtroak thoſe into leſſer, and be ſure they croſs one another.

II. Suite your garments to the body, and make them bend with the body, according as it ſtands in or out, ſtreight or crooked, or turns one way or another: the cloſer the garment ſits to the body, the narrower and ſmaller muſt the folds be.

III. All your folds muſt conſiſt of two lines and no more, which you may turn with the garment at pleaſure, ſhadowing the innermoſt deeper, the outermoſt more light; and if the folds be never ſo curiouſly contrived, ſpare not to ſhadow them (if they fall inward from the light) with a double or treble ſhadow, as the occaſion requires.

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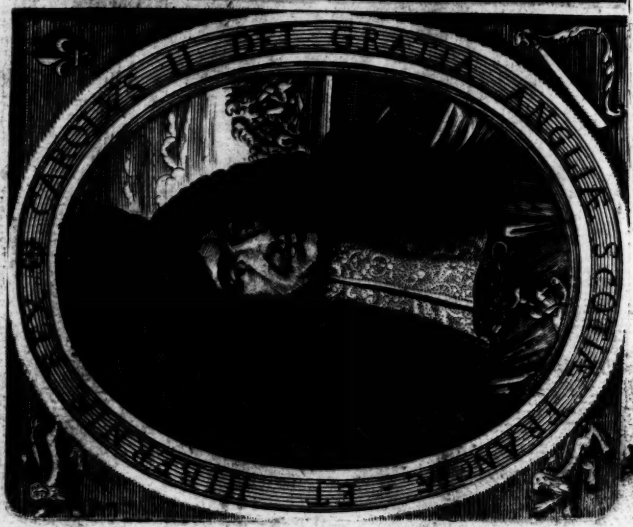
IV. The greater folds muſt be continued through the whole garment, the leſſer you may break off and ſhorten as you pleaſe.

V. The ſhades of ſilk and fine linnen, are very thick and ſmall, which require little folds and a light and rare ſhadow, commonly but double at moſt; and ſo alſo fine Drapery requires more and ſharper folds than courſe.

VI. That part of a garment which ſits cloſe to the body, muſt not be folded at all, but only ſweetly ſhaded, to repreſent the part of the body which lies under it.

CATHARINA DEI GRATIA ANGLIÆ SCOTIÆ HIBERNIÆ ET VIRGINIÆ


CAROLVS II DEI GRATIA ANGLIÆ SCOTIÆ FRANCIÆ ET HIBERNIÆ

VII. Observe the motion of the wind and air, for driving loose apparel all one way, drawing that part of the garment first which lies highest and closest upon the body, before you draw the looser part that flies off from the body, *lest by drawing the loose part of the garment first you should be out, and so place the body crooked or awry.*

CHAP. XIII.

Of Mixed and Uncertain Forms.

I. FOr the drawing the form of any beast, begin with your lead or coal at the forehead, drawing downward the nose, mouth, upper and nether chop, ending your line at the throat; then viewing it again where you begun, from the forehead, over the head, ears and neck, continuing till you have given the full compass of the buttock, then mark out the legs and feet: Viewing it again, touch out the breast with the eminency thereof; Lastly, finish the tail, paws, tongue, teeth, beard, and several shadows.

II. In drawing beasts you must be well acquainted with their shape and action, without which you shall never perform any thing excellent in that kind: and here if you draw it in an Emblem or the like, you ought to shew the Landskip of the Country natural to that beast.

III. In birds begin also the draught at the head, (and beware of making it too big) then bring from under the throat the breast line down to the legs, there stay, and begin at the pinion to make the wing, which being joined to the back line will be presently finished:

the eye, legs and train muſt be at laſt, letting always (in birds as in beaſts) the fartheſt leg be ſhorteſt; their feathers (as the hair in beaſts) muſt take their beginning at the head very ſmall, and fall in one way backwards in five ranks, greater and greater to the concluſion.

IV. Inſects, as flies, bees, waſps, graſhoppers, worms, and ſuch like, are eaſie to be drawn and not hard to be laid in Colours; in doing theſe, it will at firſt be abſolutely neceſſary to have the living pattern before your eyes.

V. To draw a flower, begin from the boſs, tufft or wart in the middle; as in a Roſe or Marigold, with the yellow tufft, which being made, draw lines equally divided, from thence to the greateſt compaſs or extent of your flower: you may draw them either fully open or in the bud, and laden with dew, wet, and worms, and then you may draw rudely with the coal or lead the leaves afterwards, giving them their veins or jaggedneſs,

VI. To take the natural and lively ſhape of the leaf of any herb or tree.

Firſt, take the leaf that you would have, and gently bruiſe the ribs and veins on the back-ſide of it: afterwards wet the ſide with linſeed oyl, and then preſs it hard upon a piece of clean white paper, and ſo you ſhall have the perfect figure of the ſaid leaf, with every vein thereof ſo exactly expreſt, as being lively coloured it will ſeem to be truly natural.

CHAP.

CHAP. XIV.

Of Landskip.

I. LAndskip is that which expreſſeth in lines the perfect viſion of the earth, and all things thereupon, placed above the horizon, as towns, villages, caſtles, promontaries, mountains, rocks, valleys, ruines, rivers, woods, foreſts, chaſes, trees, houſes and all other buildings, both beautiful and ruinous.

II. Firſt, Always expreſs a fair horizon, ſhewing the heavens, cloudy or clear, more or leſs according to the occaſion; and if yon expreſs the Sun, let it be either as riſing or ſetting, and as it were behind or over ſome hill or mountain.

The Moon and Stars are ſeldom or never depicted, unleſs it be in repreſentation of twilight; becauſe all things are ſuppoſed to be ſeen by day.

III. Secondly, If you expreſs the Sun, make his light to reflect upon all the trees, hills, mountains, rocks, or buildings; ſhading the contrary ſide; after which manner alſo ſhadow clouds, miſts, and the like: making the ſhadows to fall all one way.

IV. Thirdly, be very careful to augment or leſſen every thing proportionably to their diſtance from the eye, making them either bigger or leſſer.

V. In expreſſing things at large diſtances, as ten, twenty or thirty miles off; where the object is hard to be diſcerned, as whether it be Temple, Caſtle, Houſe or the like; ſhew no particular ſigns thereof, or any eminent diſtinction; but rather as weakly, faintly, and confuſedly as the eye judgeth of it.

VI. If Landskips be laid in Colours, the farther you go, the more you muſt lighten it with a thin and airy blew, to make it ſeem as it were afar off, beginning at firſt with a dark green, ſo driving it by degrees into a blew, according to the diſtance.

VII. Make your Landskip to ſhoot (as it were) away, one part lower than another, making the neareſt hill or place higheſt, and thoſe that are farther off, to ſhoot away under that, that the Landskip may appear to be taken from the top of an hill.

VIII. Let every thing have its proper motion, as *in trees* when they are ſhaken with the wind, making the ſmaller boughs yielding; the ſtiffer leſs bending: *in clouds* that they follow the winds: *in rivers*, the general current, and flaſhing of the water againſt the boat ſides: *in the Sea*, the waves and other proper agitations; and laſtly, *let every thing* which moveth whether eſſentially or accidentally, have its proper repreſentation.

IX. Let your work imitate the ſeaſon you intend it for.

As if you intend it for a winter piece, repreſent felling of wood; ſliding upon the Ice; fowling by night; hunting of bears or foxes in the ſnow; making the trees every where naked or laden with the hoar froſt; the earth bare without greenneſs, flowers or cattel; the air thick;

water frozen, with carts paſſing over it and boys upon it, &c.

X. Laſtly, let every ſite have its proper *parergra*, adjuncts, or additional graces, as the Farm houſe, Wind-mill, Water-mill, Woods, Flocks of ſheep, Herds of cattel, Pilgrims, ruines of Temples, Caſtles, and Monuments; with a thouſand ſuch other only proper to particular ſubjects.

CHAP. XV.

Of Diapering and Antique.

I. Diapering, is a tracing or running over your work again when you have, as it were, quite done, with damask branches, and ſuch like.

It is uſed to counterfeit cloth of gold, ſilver, damask, velvet, chamlet and the like, with what branch and in what faſhion you pleaſe: it is derived from the Greek word διαπερόω, tranſeo, *to paſs over, and only ſignifies a light paſſing over the ſame again.*

II. If you Diaper upon folds, let your work be broken off accordingly, and taken as it were by the half.

For reaſon ſheweth that the fold covereth ſomething which cannot be ſeen by reaſon of it, which if it was drawn out at length would all appear plain.

III. Let the whole work be *homogene*; that is, let the ſame work be continued throughout the whole garment, ſetting the faireſt branch in the moſt eminent and perſpicuous place, cauſing it to run upwards, for elſe your work would be ridiculous.

IV. You

IV. You may either ſhadow the ground and leave your work white; or ſhadow your work and leave the ground white; and as you ſhall pleaſe in this kind, your filling may be with ſmall pricks, which will ſhew very fair.

V. Antique (*ab antes*) are buttereſſes whereon the building is ſtayed, as alſo the outwardmoſt ranges, uſed in fore-fronts of houſes, in all manner of Compartments, curious Architecture, Armours, Jewels, and Columns.

VI. The form of it is (only for delights ſake) a general or irregular compoſition of men, beaſts, birds, fiſhes and flowers and ſuch like, without either rule or reaſon.

VII. Laſtly, obſerve the continuation of one and the ſame work, through the whole piece, without the leaſt change or alteration.

As if it be naked boys, playing, lying, ſitting, or riding upon goats, eagles, dolphins and the like; ſtrings of pearl, Satyrs, Tritons, apes, dogs, oxen, bearing or drawing fruits, branches, or any wild fanſie after your own invention, with a thouſand ſuch other idle toys; be ſure you obſerve the continuation.

CHAP. XVI.

To take the perfect draught of any Picture.

I. TAke a ſheet of fine *Venice* paper, wet it all over with linſeed oyl on one ſide thereof, which then wipe off as clean as you can; let the paper dry, and lay it on any printed or painted picture; then with a black-lead pen you may draw it over with eaſe:

eaſe: put this oyled paper upon a ſheet of clean white paper, and with a little pointed ſtick or feather out of a ſwallows wing, draw over the ſtroaks which you drew upon the oyled paper; ſo ſhall you have the exact form upon the white paper, which may be ſet out with colours at pleaſure.

II. *Or thus*, The picture being drawn as before in the oyled paper, put it upon a ſheet of white paper, and prick over the drawing with a pen: then take ſome ſmall coal, powder it fine, and wrap it in a piece of ſome fine linnen, and bind it up therein looſely, and clap it lightly, all over the pricked line by little and little, and afterwards draw it over again once or twice, with pen or pencil.

III. *Or thus*, Rub a ſheet of white paper all over on one ſide with black lead, or elſe with vermilion mixed with freſh butter; lay the coloured ſide upon a ſheet of white paper, then lay the picture you would coppy out upon the other ſide of the coloured paper, and with a ſmall pointed ſtick or ſwallows quill, go over all the ſtroaks of your picture, and it will be exact on the white paper.

IV. *Or thus*, Lay a piece of Lanthorn horn upon the picture, then draw the ſtroaks of your picture with a hard nibbed pen upon the horn; and when it is dry, breath upon the horn twice or thrice, and preſs it hard upon white paper a little moiſtned.

V. *Or thus*, Take an oyled ſheet (as at the firſt Section of this Chapter) rub one ſide of it with lamb black or lake; lay it upon a ſheet of fair paper with the coloured ſide downwards, and upon it lay the picture you would coppy out, and trace it over with a ſwallows feather.

VI. *Or thus*, Take fine lake mixed with linſeed oyl, and draw with it, inſtead of Ink, all the out-

ſtroaks

ſtroaks of any picture, and other material parts; then wet the contrary ſide of the picture and preſs it hard upon a ſheet of paper, and it will leave behind it all that which you drew over.

VII. *Or thus*, Grind Printers black fine, and temper it with water, and with a pen dipt in it, draw over the out-lines and maſter ſtroaks: wet then ſome white paper with a ſponge or the like, and preſs it hard thereupon; and you ſhall have the ſtroaks you drew upon the white paper.

VIII. *Or thus*, Lay the print (the back-ſide of it) upon a clear glaſs, or oyled paper, then lay a clean paper upon the print; hold it up againſt the light, ſo will you ſee all the ſtroaks which you may draw out, and ſhadow alſo if you pleaſe.

CHAP XVII.

To extend or contract a Picture keeping the proportion.

I. ENcompaſs your picture with one great ſquare, which divide into as many little ones as you pleaſe: this done, according as you would have your picture either greater or leſs, make another ſquare greater or leſs, which divide into as many equal ſquares, which be drawn with a black lead plummet.

Take your black lead pen, and draw the picture by little and little, paſſing from ſquare unto ſquare (by the example of the pattern) until you have gone all over with it: obſerving, that in what part of the ſquare the picture lies, you draw the like part in the ſquare anſwerable thereto, till you have finiſhed the whole.

III. Then

III. Then draw it over with a pen, in which ſecond drawing of it you may eaſily mend any fault, and ſhadow it at pleaſure.

IV. *Laſtly*, When it is throughly dry, rub it over with the crum of white-bread, and it will take off all the black lead-ſtroaks, ſo will your draught remain fair upon the paper.

CHAP. XVIII.

To expreſs the Powers.

I. *Eternity*, It is expreſſed in the form of a fair Lady, having three heads, ſignifying time paſt, preſent, and to come; in her left hand a circle, pointing with the forefinger of her right hand up to Heaven: the circle ſignifies ſhe hath neither beginning nor end.

In the Medals of Trajan *ſhe was figured red, ſitting upon a Sphear, with the Sun in one hand, the Moon in the other (by her ſitting is ſignified perpetual conſtancy.) In the Medals of* Fauſtina, *ſhe is drawn with a vail; and in her right hand the Globe of the World.* Boccace *writing of the progeny of the Gods, ſaith that the Ancients derived it from* Demogorgon, *as the prineipal and firſt of them all, who inhabited in the middle or center of the earth,* encircled round about and circumveſted with a dark and obfuſcate cloud, breathing from his mouth a certain liquid humidity. *But however what eternity is, the name doth clearly diſcover, containing in it ſelf all worlds and ages, and not limited or meaſured by any ſpace of time.* Claudius *deſcribes it by a ſerpent that compaſſeth round with her body the Cave or Den wherein it lieth, ſo as making a*

circle,

circle, ſhe holds in her mouth the end of her tail, which with the Ægyptians *was the emblem of a year.*

All in a circle thus ſhe ſits involv'd,
Whoſe firm tenacity is ne'er diſſolv'd:
She ſends forth times, and them recalls again.
Ages to come, and paſt ſhe doth retain.

But according to Boccace, *as Eternity hath an abſolute command over all times, ſo ſhe lives far hence in ſome remote and unknown vale, where humane ſteps never approached, but is even unfound out of the cœleſtial inhabitants, thoſe happy ſouls, who ſtand before the preſence of the greateſt, that only knows all things.*

II. *Time*, It is drawn ſtanding upon an old ruine, winged, and with Iron teeth. *Or thus*, An old man in a garment of ſtars; upon his head a garland of roſes, ears of corn, and dry ſticks, ſtanding upon the Zodiaque, with a looking glaſs in his hand; two children at his feet, the one fat, the other lean, writing both in one book; upon the head of one, the Sun, upon the other the Moon. *Or thus*, An old man, bald behind, winged, with a ſithe and an hour glaſs, having a lock of hair on his forehead.

III. *Fate*, A man in a fair, long, flaxen robe, looking upwards to bright ſtars encompaſſed with thick clouds, from whence hangs a golden chain.

IV. *Fortune*, A naked Lady having an Inſign or Sail overſhadowing her, ſtanding upon a globe or ball.

Lactantius *ſaith that Fortune is a vain, idle and ſenſeleſs name, ſhewing forth mans weakneſs in attributing any thing thereto: which* Marcus Tullius *confirmeth, where he ſaith that this name of Fortune, was firſt brought in to cover the ignorance of man.* Alexander Neopolitanus *ſaith that at* Preneſtes *in a temple ſhe was depicted in*

in the ſhape and form of two ſiſters, both conjoined in one and the ſame ſtatue. Pauſanius *ſaith that her moſt ancient ſtatue was that which* Bupalus *made in* Greece *in ſhape of a woman, upon whoſe head was a round ball, and in one of her hands a* Cornucopia. *She is called the blind Goddeſs, and partial Lady, by reaſon of the beſtowing of her unconſtant and mutable favours.*

Imperious ruler of the worlds deſigns,
Lady of ſolace, pleaſure and of pains:
Like Tennis balls thou beat'ſt us to and fro;
From favours to diſgrace, from joy to woe;
From wars to peace, from rule to be commanded:
But with unconſtancy thou now art branded.

Macrobius *ſaith ſhe was ſet forth with wings on her ſhoulders, (to ſhew that ſhe was always at hand among men) had by her ſide the rudder of a Ship (to ſhew that ſhe doth rule and command) her ſelf placed upon a wheel, holding in her right hand a golden ball, and in the other a whip; ſhewing where ſhe ſmiled, wealth and honour, and where ſhe frowned, croſſes and miſery ſhould follow.*

In Egypt *Fortune was depicted like a lady turning a great glaſs wheel, on whoſe top was many men playing, others a climbing up; and others having attained it, precipitating themſelves and falling down back again.*

V. *Equality*, A Lady lighting two torches at once.

VI. *Victory*, Is expreſſed by a Lady clad all in Gold, in one hand a helmet, in the other a pomegranate: *by the helmet is meant force; by the pomegranate unity of wit and counſel.*

Auguſtus *drew her with wings ready to fly ſtanding upon a globe, with a garland of Bays in one hand, in the other a Coronet of the Emperor, with theſe words* Imperator Cæſar.

In

In the Medals of Octavius, *ſhe is drawn with wings, ſtanding on a baſe, in one hand a palm, in the other a crown of gold.*

VII. *Peace*, Is drawn like a Lady, holding in her right hand a wand or rod downwards towards the earth, over a hideous Serpent of ſundry colours; and with her other hand covering her face with a veil, as loth to behold ſtrife or war.

Trajan *gave a Lady, in her right hand an Olive branch, in her left a* Cornucopia. *In the* Medals *of* Titus, *a Lady having in one hand an olive branch, the other leading a Lamb and Wolf coupled by the necks in one yoke. The Olive is always the emblem of peace.*

VIII. *Providence*, A Lady lifting up both her hands to Heaven with theſe words *Providentia Deorum. Or thus*, A Lady in a robe, in her right hand a Scepter, in her left a *Cornucopia*, with a globe at her feet.

IX. *Concord*, A Lady ſitting, in her right hand a charger for ſacrifice, in her left a *Cornucopia*, with the word *Concordia*. *Or thus*, A fair Virgin, holding in one hand a Pomegranate; in the other a Mirtle bunch. *The nature of theſe trees are ſuch, that if planted though a good ſpace one from another, they will meet and with twining embrace one another.*

X. *Fame*, A Lady clad in a thin and light garment, open to the middle thigh, that ſhe might run the faſter; two exceeding large wings; [illegible]ments embroider'd with eyes and ears, and blowing of a Trumpet.

XI. *Deſtiny*, A Lady, who with great fury, and exceeding celerity holds in her hand an Iron bow ready bent, aiming to ſtrike fortune even at the very heart. *Deſtiny and fortune can never agree; and therefore as fortune flies from deſtiny, ſo deſtiny purſues fortune; for where deſtiny ſets her foot, there fortune is as it were inchanted and conjured, as having no power, efficacy or vertue.*

CHAP.

CHAP. XIX.

Of Vertues and Vices.

I. *Vertue* is repreſented by *Hercules*, naked, with his Lyons skin, and knotted club, performing ſome one of his Labours; as offering to ſtrike a dragon keeping an Apple-tree; or holding in his hand three golden Apples.

Hercules *is nothing elſe but Vertue, his name in the Greek tongue is* Ηρακλῆς, quaſi ἥρας κλεὸς, Junonis gloria: vel quia κλησεῖ τὰς ἥρωας, celebrat aut commemorat Heroas, *which is the property of Vertue: he is drawn naked to demonſtrate her ſimplicity: by the dragon is ſet forth all manner of vices: by the Lions skin, magnanimity and greatneſs: by his Oaken Club, Reaſon and Policy: by its knottineſs, the difficulty, pains and labour in ſeeking after vertue: by the three golden Apples, the three Heroical Vertues, Moderation, Content and Labour.*

II. *Piety* is drawn like a Lady, with a ſober countenance; in her right hand ſhe holdeth a ſword ſtretched over an Altar; in her left hand a Stork; and by her ſide is placed an Elephant and a Child.

The Stork is ſo called of στέργη, *the reciprocal or mutual love of parent and child, of which this bird was ever an Emblem, for the love and care ſhe hath of her parents being old. The Elephant worſhips towards the riſing of the Sun.*

III. *Hope* is drawn like a beautiful child in a long robe hanging looſe, ſtanding upon tiptoes, and a treſoyl or three leaved graſs in its right hand, in its left an Anchor.

The looſe veſtment ſhews, ſhe never pincheth or binds truth; ſtanding on tiptoes, ſhews ſhe always ſtandeth dangerouſly; the branch of treſoyl ſhews knowledge (the ground of faith)

faith) faith (the ground of hope) and hope it ſelf.

IV. *Mercy*, a Lady ſitting upon a Lion, holding in one hand a Spear, in the other an Arrow; which ſhe ſeemeth to caſt away.

In the Medals *of* Vitellius *ſhe ſits with a branch of Bays in her hand, and a ſtaff lying by her.*

V. *Juſtice*, a fair young Virgin, drawing after her, with her left hand, a black, hard, ill-favoured Woman, haling her by main force, and ſtriking her over the face in a ſevere manner.

The young Virgin was Juſtice, the other Injuria: *ſhe is drawn young and a Virgin, to ſhew, that Judges and adminiſtrators of Law ought to be incorrupt and free from bribes, partiality or flattery, but juſt, conſtant and ſincere.*

VI. *Felicity*, a Lady ſitting in an Imperial throne; in the one hand ſhe holdeth a *Caduceus* or Rod, in the other hand a *Cornucopia*.

VII. *Fruitfulneſs*, a Lady ſitting upon a bed, and two little Infants hanging about her neck.

VIII. *Diſſimulation*, a Lady wearing a vizard of two faces, in a long robe of changeable colour; and in her right hand a Magpye.

IX. *Security*, a Lady leaning againſt a pillar, before an Altar, with a Scepter in her hand.

X. *Calumnia*, a beautiful, rich and young woman, approaching towards a Judge, gorgeous in her habit, with an angry, ſcornful and diſcontented look, and red and fiery eyes; ſhe holds in her left hand a flaming torch: and with her right ſhe by force draws a young man by the hair of the head.

XI. *Envie*, a wonderful lean old man, with a pale and meagre face, in whoſe withered cheeks Age hath wrought deep furrows and wrinkles.

XII. *Penitence*, a Woman in vile, ragged and baſe attire, infinitly deploring her being: and bemoaning her ſelf

in passionate fits above all measure, continually weeping.

CHAP. XX.

Of Rivers.

I. HErein you ought to observe the Adjuncts and Properties of the same; which consists in some notable Accident done near them; some famous City, trees, fruits, or reeds situate upon their banks; some fish only proper to their streams; or recourse of shipping from all parts of the world.

II. Therefore you had best place the City upon their heads; their fruits in a *Cornucopia*; reeds, flowers, and branches of trees in their Garlands, and the like.

III. The River *Tyber*. It is expressed (in the *Vatican* in *Rome*) in a goodly Statue of Marble lying along (for so you must draw them) holding under his right arm a she Wolf, with two little infants sucking at her teats, leaning upon an Urne or Pitcher, out of which issueth its stream: in his left a *Cornucopia* of delicate fruits, with a grave Countenance and long beard; a garland of flowers upon his head; and resting his right leg upon an Oar.

IV. The River *Nilus*. It is seen (in the *Vatican*) cut out in white Marble, with a garland of sundry fruits and flowers, leaning with his left arm upon a Sphynx; from under his body issueth its stream; in his left arm a *Cornucopia* full of fruits and flowers on one side, with sixteen little children, smiling and pointing to the flood.

The Sphynx was sometimes a monster which remained by Nilus: *the Crocodile* ἀπὸ τοῦ κρόκον δειλιᾶν, *from his hatred of Saffron, the most famous monster of* Egypt: *the sixteen*

the ſixteen children, the ſixteen cubits of height, uttermoſt of the fluving of Nilus : *their ſmiling looks, the profit of it, which glads the hearts of the Sun-burnt inhabitants.*

V. The River *Tigris*. It was drawn like an old man (as the reſt) and by his ſide a Tiger.

This beaſt was given it as well for its fierce ſtreams, as for the ſtore of Tigers which are there.

VI. The River *Ganges*. It bears the ſhape of a rude and barbarous ſavage, with bended brows, of a fierce and cruel Countenance, crowned with a palm, having, as other floods, his pitcher, and by his ſides a *Rhinoceros*.

This River runneth through India, *and hath its head from a fountain in Paradiſe.*

VII. The River *Indus*. It is drawn with a grave and jovial aſpect, with a garland of its country flowers, by its ſide a Camel (from κάμαι :) it is repreſented pleaſantly; grave, as an Emblem of the *Indian* pollicy.

This is the greateſt River in the world, receiving into its channel threeſcore other great and famous Rivers, and above an hundred leſſer.

VIII. The River *Thameſis*. In the houſe of an honourable friend, I ſaw the *Thames* thus drawn : A Captain or Soldier lying along, holding in his right hand a Sword, and under his arm the Auguſt tower : in the other a *Cornucopia* of all fragrancies, with a Golden chain which held four Crowns ; and with this he encompaſſed the ſtreams, from under which bending of his left arm they ſeemed to flow : his temples were adorned with Bays, the River was empaled on one ſide with Anchors, and on the other ſtood *Cæſar's Auguſta*.

IX. The River *Arnus*. It is a famous River in *Italy*, drawn like an old man leaning upon his pitcher, powr-

ing out water: upon his head a garland of Beech, by his right side a Lyon, holding forth in his dexter paw a red Lilly or Flower-de-luce, the ancient Armes of the chief City of *Tuscany.*

By the garland of Beech is set forth the great abundance of Beech-trees growing about Fafterona *in the* Appennines *where* Arnus *hath his head.*

X. The River *Po* or *Padus.* It is depicted with an Ox's face, having a garland of Reeds or Poplar on his head.

It is so called from the Sister of Phaeton, *whom the Poets feign destroyed with lightning, and drowned here: the head of the Ox, is from its horrid noise and roaring, whose crooked banks resemble the horns thereof; by the sides whereof grows much Reed and many Poplars.*

XI. The River *Danubius.* In the ancient Medals of the Emperour *Trajan* it is depicted with its head covered with a veil.

It is so drawn because its head or first spring is unknown. Ausonius *saith,*

Danubius periit caput occultatus in ore.

XII. The River *Achelous. Ovid* describes it with a garland of Reeds, Willow, and the like: having two Urns or Earthen Pitchers, the one empty, the other casting out water; and upon its head two horns, the one whole the other broken.

This River as it is the most famous of all Greece, so it divides Ætolia *from* Arcadia, *and then falls into the Sea. This is fetch'd from the fable of* Hercules *who combated him in the likeness of a Bull, and broke one of his horns, for* Deianiras *sake, there turning both its streams into one, whereupon one of the Urns is empty.*

XIII. The

XIII. The River *Niger*. It is drawn like a black Moore, with Glory, or a Coronet of Sun-beams falling upon his Urne, having by its side a Lyon.

By *the Sun-beams and black, is shewed the clime, lying under the torrid Zone, whose inhabitants are Blacks or Moors; the Lyon is that which the Country* Mauritania *and* Barbary *breed, being the fiercest in the World.*

CHAP. XXI.

Of Nymphs.

I. NYΜΦΗ, *Nympha*, a Bride (*from* νεὸν & φαίνεσθαι *as it were a fresh or new creature: or as some will have it from* Nympha quasi Lympha, *by changing* L. *into* N. *after the Dorick dialect:*) it is nothing else but an Allegory, from the Vegetative humidity, which gives life to trees, herbs, plants, and flowers, by which they grow and increase.

II. They are feigned to be the daughters of the Ocean, the mother of floods, the nurses of *Bacchus*, and goddesses of fields, who have the protection and charge of mountains, herbs, woods, meadows, rivers, trees, and generally of the whole life of man.

III. *First*, Napææ, *Nymphs of the Mountains.*

Let them be drawn of a sweet and gracious aspect, in green mantles, girded about in the middle; and upon their heads garlands of honey-suckles, wild-roses, tyme and the like; their actions, dancing in a ring, making garlands or gathering flowers.

They are ſo called from Νᾶπος, *the top of an hill, or woody valley.*

IV. *Secondly*, Dryades, *Nymphs of the woods.*

Draw theſe leſs fair than the former, of a brown or tawny complexion, hair thick like moſs, and their attire of a dark green.

They are ſo ſo called from Δρῦς *an Oak, having their beginning with trees, and dying again with them.*

V. *Thirdly*, Naiades, *Nymphs of the floods.*

Draw them beautiful, with arms and legs naked, their hair clear as Cryſtal; upon their heads garlands of water-creſſes, with red leaves: their actions, powring out water.

They are ſo called from Νέω *to flow, or bubble as water doth.*

VI. *Thetis*, a Lady of a brown complexion, her hair ſcattered about her ſhoulders, crowned with a coronet of Periwincle and Eſcallop ſhells, in a mantle of Sea-green, with chains and bracelets of Amber about her Neck and Arms, and a branch of red Coral in her hand.

VII. *Galatea*, a moſt beautiful young Virgin, her hair careleſly falling about her ſhoulders like ſilver threads, and at each ear a fair pearl with a double ſtring of them (ſometimes) about her Neck and left Arm, a mantle of pure thin and fine white, waving as it were by the gentle breathing of the air, viewing in her hand a ſponge made of Sea-froth, *ſhe is ſo called from* γαλὰ, *lac, milk.*

VIII. *Iris*, a Nymph with large wings, extended like to a ſemicircle, the plumes ſet in rows of divers colours, as yellow, green, red, blew or purple; her hair hanging before her eyes, her breaſts like clouds, drops of water falling from her body, and in her hand *Iris*, or the Flower-de-luce.

Virgil

Virgil makes her the meſſenger of *Juno* (where ſhe is taken for the air) when he ſaith, *Irin de Cœlo miſit Saturnia Juno.*

IX. *Nymphæ Dianæ*; Let them be cloathed in white linnen to denote their Virginity, and their garments girt about them; their Arms and Shoulders naked; bows in their hands, and arrows by their ſides.

X. *Aurora*, the Morning. A young Virgin with carnation wings and a yellow mantle; in her forehead a ſtar, and Golden Sun-beams from the Crown of her head, riding upon *Pegaſus*, with a viol of dew in one hand, and various flowers in the other, which ſhe ſcatereth upon the earth.

CHAP. XXII.

Of the Nine Muſes.

I. *Clio.* She is drawn with a Coronet of Bays; in her right hand a Trumpet; in her left a Book, upon which may be written *Hiſtoria*; her name is from praiſe or glory.

II. *Euterpe*, Is crowned with a garland of flowers, holding in each hand ſundry wind inſtruments; her name is from giving delight.

III. *Thalia.* Draw her with a ſmiling look, and upon her Temples a Coronet of Ivy, a Mantle of Carnation embroidered with ſilver twiſt and gold ſpangles, and in her left hand a vizard; her Ivy ſhews ſhe is miſtriſs of Comical Poeſie.

IV. *Melpomene.* Draw her like a virago, with a majeſtick and grave countenance, adorn her head with Pearls, Diamonds and Rubies; holding in her left hand

Scepters with Crowns upon them, other Crowns and Scepters lying at her feet; and in her right hand a naked poniard, in a Mantle of changeable Crimson. Her gravity befits Tragick Poesie.

V. *Polyhymnia.* Draw her acting a Speech with her forefinger, all in white, her hair hanging loose about her shoulders of an orient yellow, upon her head a garland of the choicest jewels intermixt with flowers, and in her left hand a book, upon which let it be written *Suadere*; her name imports memory, to whom the Rhetorician is beholden.

VI. *Erato.* She hath her name from Ἔρως, *Amor, Love:* draw her with a sweet and comely visage, her temples girt with Myrtles and Roses, bearing an heart with an Ivory Key; by her side *Cupid*, winged, with a lighted torch; at his back, his bow and quivers.

VII. *Terpsichore*; a chearful visage playing upon some Instrument; upon her head a Coronet of Feathers of sundry Colours, but chiefly green; in token of the victory which the Muses got of the Syrenes, *&c.* by ynging.

VIII. *Urania*, A beautiful Lady in an azure robe; upon her head a Coronet of bright stars; in her right hand the Cœlestial globe, and in her left the Terrestrial. Her name imports as much as heavenly; *Urania cœli motus scrutatur & Astra.*

IX. *Calliope.* Upon her head draw a Coronet of Gold; upon her left Arm Garlands of Bays in store, for the reward of Poets; and in her right hand three books, upon which write *Homerus, Virgilius, Ovidius.*

The Muses had their names, as Eusebius *saith,* παρὰ τὸ μυεῖν, *which is to instruct, because they teach the most honest and laudable disciplines.*

CHAP

CHAP. XIII.

Of the four Winds.

I. *Eurus*, the East-wind. Draw a youth with puffed and blown cheeks (as all the other winds muſt be) wings upon his ſhoulders, his body like a Tauny Moor, upon his head a Red Sun.

II. *Zephyrus*, the Weſt-wind. Draw a youth with a merry look, holding in his hand a Swan, with wings diſplai'd as about to ſing, on his head a garland of all ſorts of flowers.

'Tis called Zephyrus quaſi ζωὴν φέρων, *bringing life, becauſe it cheriſheth and quickneth.*

III. *Boreas*, the North-wind. Draw it like an old man, with a horrid, terrible look; his hair and beard covered with ſnow, or the hoar-froſt; with the feet and tail of a Serpent.

IV. *Auſter*, the South-wind, is drawn with head and wings wet, a pot or urn pouring forth water, with which deſcend frogs, graſhoppers, and the like creatures which are bred by moiſture.

CHAP. XXIV.

Of the Months of the Year.

I. *January* muſt be drawn all in white, like ſnow or hoar froaſt, blowing his fingers; in his left arm a billet, and *Aquarius* ſtanding by his ſide.

II. *February* is drawn in a dark skie colour, carrying in his right hand *Piſces*, or Fiſhes.

III. *March* is drawn tawny with a fierce look, a helmet

met upon his head, leaning upon a Spade: in his right hand *Aries*; in his left Almond Bloſſoms and Scions; and upon his arm a basket of Garden-ſeeds.

IV. *April* is drawn like a young man in green, with a garland of Myrtle and Hawthorn-buds, winged; in the one hand Primroſes and Violets; in the other *Taurus*.

V. *May* is drawn with a ſweet and lovely aſpect, in a robe of white and green, embroidered with Daffadils, Haw-thorn and Blew-bottles; on his head a garland of white, red, Damask-roſes; in the one hand a Lute; upon the forefinger of the other a Nightingal.

VI. *June* is drawn in a mantle of dark graſs-green; upon his head a Coronet of Bents, King-cobs, and Maiden-hair; in his left hand an Angle; in his right *Cancer*; and upon his Arm a basket of Summer fruits.

VII. *July* is drawn in a Jacket of a light yellow, eating Cherries, with his face and boſome Sun-burnt; on his head a garland of Centaury and Tyme, on his ſhoulder a Sithe; with a bottle at his girldle, carrying a Lion.

VIII. *Auguſt* is like a young man of a fierce look, in a flame-coloured robe; upon his head a garland of wheat; upon his arm a basket of Summer fruits; at his belt a Sickle, bearing a Virgin.

IX. *September* is drawn in a purple robe, with a cheerful look; and on his head a Coronet, of white and purple grapes; in his left hand a handful of Oats, with a *Cornucopia* of Pomegranates and other Summer fruits; and in his right hand a ballance.

X. *October* is drawn in a garment of the colour of decaying flowers and leaves; upon his head a garland of Oak-leaves with the Acorns; in his right hand a Scorpion; in his left, a basket of Services, Medlars, and Cheſtnuts.

XI. *November* in a robe of changeable green and black:

black: upon his head, a garland of Olives with the fruit; in his right hand *Sagittarius*: and in his left bunches of Parſneps and Turneps.

XII. *December* is drawn with a horrid aſpect, clad in Iriſh rug, or courſe Freeze, girt about him: upon his head three or four night-caps, and over them a Turkiſh Turbant; his noſe red; beard hung with Iceickle; at his back a bundle of Holly and Ivy; holding in Furred Mittens a Goat.

Where note it will be good to give every month its natural and proper Landskip, not making bloſſoms and fruits upon trees in December; *nor a barren face of the earth and trees in* June.

CHAP XXV.

Of Perſpective in general.

ΟΠΤΙΚΗ in Greek, *Perſpectiva* in Latin, the *Art of ſeeing* in Engliſh; is that by which we behold, contemplate, and draw the likeneſs of all magnitudes, juſt in form and manner as they appear to the Eye.

II. The matter to be ſeen or ſpeculated is a magnitude: the manner of the ſpeculation is by radiations of Light, either direct, reflected or broken.

III. A magnitude is that which hath form; and it is either lineal, ſuperficial, or ſolid; that is, either a complication of points, a complication of lines; or a complication of ſuperficies.

IV. A line is a complication of points; that is (according to *Euclid*) a length only without either breadth or thickneſs.

V. A ſuperficies is a complication of lines; that is a length

length having breadth without thickneſs.

For as the continuation of points makes a line: ſo the couching of lines makes a ſuperficies: which is only the laying of points croſs wiſe.

A ſolid is a complication of ſuperficies; that is, a length and breadth, having depth or thickneſs.

And indeed it is nothing but the continuation of points upon a ſuperficies either perpendicularly or bending.

VII. The Contemplation of the Object, repreſents the matter to the mind, in the ſame manner as its outward appearance doth to the Eye.

And from hence comes Judgment whereby the Artiſt is enabled to deſcribe the ſame in lines; and delineate it, according to its apparent or viſual proportions.

VIII. To draw or deſcribe the Appearance in lines is the Active part of this Art, whereby the *Idæa* conceived in the mind (by ſight and contemplation) is brought to light.

IX. A radiation is a beam of light, conveighing the likeneſs of the thing, to the Eyes, or ſight; and the Knowledge thereof to the mind or underſtanding.

And this radiation is twofold, either external from the external light; or intellectual from its being and power.

X. *Direct radiations*, are thoſe which conſider the direct or ſtraight beams, which paſs between the Eye and the object.

And this is the firſt kind of Perſpective; and is many times (alone) called the Opticks.

XII. *Reflected Radiations*, are thoſe which conſider the reflection of beams, and their ſhape upon any poliſh'd body, as on a Globe, Cone, Cylinder, Pyramid, or any regular ſolid.

And this is the ſecond kind of Perſpective, which is called the Art Catoptrica.

XII. *Broken Radiations* are thoſe which conſider the

the breaking of beams, as they are to be ſeen through a glaſs or Cryſtal cut into ſeveral plains or ſuperficies.

And this is the third and laſt kind of Perſpective which is called the Art Dioptrica.

CHAP. XXVI.

Of the Active part of Perſpective.

I. THe Active part of Perſpective is either *Ichnographical, Orthographical,* or *Scenographical.*

II. *Ichnographia,* is the deſcription of the plain, baſe or bottom of any body or building.

III. And it is twofold, to wit, either *Geometrical* or *Scenographical.*

IV. *Ichnographia Geometrical,* is that which gives the ſight of the bottom or baſe of any body or building.

So a Circle is the baſe of a Column; and a ſquare is the baſe of a Pedeſtal; and the like; but this Geometrical Ichnography *is not ſeen in Section, or through a Glaſs, unleſs it lies parallel to the baſe; and ſo it makes no Section with it.*

V. *Ichnographia Scenographical* is the Appearance of the ſame baſe in Section, or through a Glaſs, erected upright on the ſame plain, on which the baſe ſtands.

And by this the ſaid baſe is extended in length but contracted in breadth, for ſo it appears to the Eye.

VI. *Orthographia,* is the Viſion of the foreright ſide of any plain; to wit, of that plain or ſuperficies which lies Equidiſtant to a right line, paſſing through the outward or convex centers of both Eyes, continued to a due length.

And therefore Perſpective Orthographia, *is the delineation of the apparent right plain.*

Scenographia is the deſcription of a plain or other figure,

figure, that declines from the apparent or foreright plain; that is, of that plain which makes Angles with the said foreright plain.

The Scenographick *vision of any form, body, or building is, of that side which declines from, or constitutes an Angle, with the right line, passing from the convex centers of both Eyes aforesaid: this Artists call the* return *of the foreright side. Now the difference between the* Orthographick *and* Scenographick *vision is this; the* Orthographick *shews the side of a body or building as it is beheld when the plain of the Glass is placed equidistant to that side: but the* Scenographick *shews the side of a body or edifice as it appears through a glass raised obliquely to the said side, or making an angle therewith.*

CHAP. XXVII.

Of the Subject to be seen.

I. THe *Base* of any thing, is the plain, flat, or floor upon which any solid body, or object is placed, or raised.

II. The *Altitude* or *height* is the perpendicular space of place, between the base and Eye, or height of the visual point above the base.

III. The *Visual point*, is a point in the Horizontal line, wherein all the beams of the Eyes unite.

Exempli gratiâ. *If you look on a long straight river, the sides of which run parallel, yet by reason of the distance both sides of the river (although it be very broad) will seem to incline, touch, and unite with each other in one common point or center: and so if you look on a long straight brick-wall, the several lays of brick, and courses of mortar, will (at a great distance) seem to incline*

each

each to other in one common point or center; this point reflected on a glaſs, raiſed upright on the baſe, is called the Viſual point.

IV. The *Horizontal line* is a line proceeding from the center of the Eye to the viſual point, parallel to the Horizon of the Earth.

And this is, in men of ordinary height or ſtature, commonly about five foot from the ground or baſe.

V. The *Diſtance* is the ſpace on the baſe, between the Glaſs and point in the baſe which lies directly under the Eyes.

VI. The *Section* is a plain of tranſparent or perlucid matter (as of Glaſs) raiſed upright on the plain of the baſe ſtanding before you, parallel to a ſtraight line, paſſing through the convex centers of both Eyes.

Without the knowledge of this Section *or* Glaſs, *it is utterly impoſſible to underſtand* perſpective, *or know what it means: Or be able to give a reaſon for the difference between the* Orthographick and Scenographick *figure.*

VII. If the Glaſs is placed near the viſual point, and far from the object, the figure which is ſeen will be very ſmall: and the reaſon is, becauſe all rays comprehending the Orthographical and Scenographical figures (though more remote from the object) fall into the viſual point, as their common center.

VIII. If the Viſual point be more elevated (though at the ſame diſtance) the Scenographick figure or form will appear of a much larger magnitude: becauſe the Viſual radiations being higher, the various perpendiculars raiſed on the Section or Glaſs, cut them in wider diſtances, becauſe more remote from the Glaſs.

IX. If the Glaſs incline to the Viſual point, the Scenographick viſion will be long-wiſe between the viſual point and the object.

And

And the reaſon is, becauſe the plain of the Glaſs heaps in more of the Viſual Radiations.

X. If the Glaſs recline from the Viſual point, the Scenographick figure will appear rounder, and begin to reſemble the Orthographick.

XI. But if the Glaſs is fixed Equidiſtant to the baſe, or plain the object ſtands upon; the Scenographick and Orthographick reſemblance will be one and the ſame.

And the reaſon is, becauſe the form of the figure is loſt, or not viſible in the Section.

XII. The *Viſual Raies*, are thoſe lines which proceed from the Viſual point, through the Glaſs, to any point higher or lower than the plain of the Horizon.

XIII, *Diagonals* or lines of diſtance, are ſuch as are drawn from the point of diſtance to any other point, higher or lower than the Horizon.

XIV. The *Object* is that form, figure, body or edifice intended to be expreſſed in *Perſpective* proportions.

CHAP. XXVIII.

The General Practice of Perſpective.

I. LEt every line which in the Object or Geometrical figure is ſtraight, perpendicular, or parallel to its baſe, be ſo alſo in its Scenographick delineation.

II. Let the lines which in the object return at right Angles from the fore-right-ſide, be drawn Scenographically from the Viſual point.

III. Let

III. Let all ſtraight lines, which in the object return from the fore-right ſide, run in a Scenographick figure into the Horizontal line.

IV. Let the object you intend to delineate ſtanding on your right hand, be placed alſo on the right hand of the Viſual point: and that on the left hand, on the left hand of the ſame point: and that which is juſt before, in the middle of it.

V. Let thoſe lines which are (in the object) Equidiſtant to the returning line, be drawn in the Scenographick figure, from that point found in the Horizon.

VI. In ſetting off the altitude of Columns, Pedeſtals and the like, meaſure the heighth from the baſe line upwards in the front or fore-right ſide; and a viſual ray drawn, that point in the front ſhall limit the altitude of the Column or pillar, all the way behind the fore-right ſide or Orthographick appearance, even to the viſual point.

This rule you muſt obſerve in all figures, aſwel where there is a front or fore-right ſide; as where there is none.

VII. In delineating Ovals, Circles, Arches, Croſſes, Spirals and Croſs-arches, or any other figure, in the roof of any room; firſt draw Ichnographically, and ſo with perpendiculars, from the moſt Eminent points thereof, carry it up unto the Ceiling, from which ſeveral points carry on the figure.

VIII. The center in any Scenographick regular figure is found by drawing croſs-lines from oppoſite angles: for the point where the Diagonals croſs is the Center.

IX. A ground plain of ſquares is alike, both above and below the Horizontal line; only the more it is diſtant above or beneath the Horizon, the ſquares

will be ſo much the larger or wider.

X. In drawing a perſpective figure, where many lines come together, you may for the directing of your eye, draw the Diagonals in Red; the Viſual lines in black; the Perpendiculars in Green, or other different colour from that which you intend the figure ſhall be of.

XI. Having conſidered the height, diſtance and poſition of the figure, and drawn it accordingly, with ſide or angle againſt the baſe; raiſe perpendiculars from the ſeveral angles or deſigned points in the figure, to the baſe, and transfer the length of each perpendicular, from the place where it touches the baſe, to the baſe on the ſide oppoſite to the point of diſtance; ſo will the diametrals drawn to the perpendiculars in the baſe, by interſection with the Diagonals drawn to the ſeveral transferred diſtances, give the Angles of the figure: and ſo lines drawn from point to point will circumſcribe the Scenographick figure.

XII. If in Landskip there be any ſtanding waters, as rivers, ponds, and the like; place the horizontal line level with the fartheſt ſight or appearance of it.

XIII. If there be any houſes or the like in the picture, conſider their poſition, that you may find from what point in the Horizontal line to draw the fronts and ſides thereof.

XIV. In deſcribing things at a great diſtance, obſerve the proportion (both in magnitude and diſtance) in draught, which appears from the object to the eye.

XV. In colouring and ſhadowing of every thing; you muſt do the ſame in your picture which you obſerve with your Eye, eſpecially in objects lying near; but

but according as the diſtance grows greater and greater, ſo the Colours muſt be fainter and fainter, till at laſt they loſe themſelves in a darkiſh sky colour.

XVI. The *Catoptricks* are beſt ſeen in a common looking glaſs or other poliſh'd matter, where if the glaſs be exactly flat, the object is exactly like its original: but if the glaſs be not flat, the reſemblance alters from the original, and that more or leſs, according as the glaſs differs from an exact plain.

XVII. In drawing *Catoptrick* figures, the ſurface of the Glaſs is to be conſidered, upon which you mean to have the reflection, for which you muſt make a particular *Ichnographical* draught or projection; which on the glaſs muſt appear to be a plain full of ſquares; on which projection tranſfer what ſhall be drawn, on a plain divided into the ſame number of like ſquares: where though the draught may appear very confuſed, yet the reflection thereof on the Glaſs, will be very regular, proportional and really compoſed.

XVIII. The *Dioptrick* or broken beam may be ſeen in a tub; through a Cryſtal, or Glaſs, which hath its ſurface cut into many others, whereby the raies of the object are broken.

For, to the flat of the Cryſtal or water, the raies run ſtraight; but then they break and make an Angle; the which alſo by the refracted beams is made and continued on the other ſide of the ſame flat.

XIX. When theſe faces on a Cryſtal are turned towards a plain, placed directly before it, they ſeparate themſelves at a good diſtance on the plain; becauſe they are all directed to various far diſtant places of the ſame.

XX. But for the aſſigning to each of them a place on the ſame plain, no Geometrick rule is yet invented.

CHAP. XXIX.

A Rational Demonſtration of Chiromantical Signatures; Added by way of Appendix to Chap. V. *of this Book.*

I. THe foundation of Chiromancie depends upon the true appropriation of the ſeveral mounts, fingers, or places in the hand, to their proper ſtars or Planets.

II. The Ancients have aſſigned the root of the middle finger to *Saturn*; of the forefinger to *Jupiter*: the hollow of the hand to *Mars*: the root of the ring-finger to *Sol*: of the thumb to *Venus*: of the little finger to *Mercury*: and laſtly, the brawn of the hand near the wriſt to *Luna*.

III. That line which comes round the ball of the thumb towards the root or mount of *Jupiter* is called *Linea Jovialis*, or the life-line: that from the wriſt to the root or mount of *Saturn*, *Linea Saturnialis*: but if it points to the root or mount of *Sol*, *Linea Solaris*: if to *Mercury*, *Linea Mercurealis*: that which goes from *Linea Jovialis* to the mount of *Luna*, *Linea Lunaris*, or the natural line: the other great line above it is called *Linea Stellata*, or the line of fortune, becauſe it limits the mounts of the planets, and is impreſſed with various vertues in thoſe places according to the nature of the planet whoſe mount it runs under or ſets a boundary unto: Laſtly, the ſpace between the natural line and the line of fortune is called *menſa*, the Table.

IV. All other lines ſhall either proceed out of the ſides of the former, or elſe from ſome proper mount.

V. Every line great or ſmall, long or ſhort, hath a certain

certain beginning or root, from which it riſes; and a certain end or point to which it tends.

VI. The diſtance between both ends, is the way of its paſſage; in which way, it either croſſes ſome other line, or elſe is croſſed: if it do neither, its ſignification is continual, and ought ſo much the more to be taken notice of.

VII. Every mount hath a proper ſignification, which it receives from the ſignifications of its proper planet, being abſtractly conſidered: the ſame underſtand of all the principal lines aforeſaid.

VIII. *Saturn* is the Author of Age, Inheritances, Melancholly, Malice, Sorrow, Miſery, Calamities, Enemies, Impriſonment, Sickneſs, Diſeaſes, Perplexities, Cares, Poverty, Croſſes, Death, and whatſoever evil can befall humane life: he ſignifies Fathers, Old Men, Labourers, Dyers, Smiths and Jeſuits.

IX. *Jupiter* is the Author of Health, Strength, Moderation, Sobriety, Mercy, Riches, Subſtance, Goodneſs, Liberty, Religion, Honeſty, Juſtice, Modeſty, and all other things which may make a man happy; he ſignifies Churches, Church-men, Lawyers, Scholars, Cloathiers, and the like.

X. *Mars* is the Author of Striſe, Contention, Pride, Preſumption, Tyranny, Theſts, Murders, Victory, Conqueſt, Infortunacy, Boldneſs, and Dangers: he ſignifies Phyſicians, Chirurgians, Apothecaries, the Camp, all Military men and Preferments, Edge-tools, Butchers, Carpenters, Gunners, Bailiffs and the like.

XI. *Sol* is the Author of Honour, Glory, Renown, Preferment, Life, Generoſity, Magnanimity, Soveraignty, Dominion, Power, Treaſures, Gold, Silver, and whatſoever may make the life of man ſplendid; he ſignifies Kings, Princes, Rulers, and all men in power, Minters, Goldſmiths, long Life and Wiſdom.

XII. *Venus* is the Author of Joy, Pleaſure Mirth, Solace, Luſt, Uncleanneſs and Idleneſs: ſhe ſignifies Women-kind, Siſters, Ladies, Whores, Curioſities, Lapidaries, Silkmen, Taylors, Mercers, Upholſters, Pictures, Picture-drawers, the Pox, and diſeaſes proceeding from uncleanneſs.

XIII. *Mercury* is the Author of Craft, Subtilty, Policy, Deceit, Perjury, Study, Hearing, and Merchandizing: he ſignifies Merchants, Clerks, Scholars, Secretaries, Ambaſſadors, Pages, Meſſengers, Poets, Orators, Stationers, Cheaters, Thieves, Petty-lawers, Philoſophers, Mathematicians, Aſtrologers.

XIV. *Luna* is the Author of popular Fame both Good and Evil, Joy and Sorrow, Mutability and Inconſtancy; Affection and Diſaffection; Moiſture and every affect which may be ſaid to be common: ſhe ſignifies Waters, Ships, Seamen of all ſorts, Queens, Ladies, a Governeſs, the Common people in general, Neighbours, Mothers, Kindred, Fiſhmongers, Vintners, Tapſters, Midwives, Nurſes and Travellers.

This being known, underſtand,

XV. *Firſt*, That the lines take their ſignification from the mount of that planet from whence they riſe.

XVI. *Secondly*, That the place from whence any line riſes ſhews the ground, cauſe, or original of the things ſignified by that line: the line or mount to which it points, ſhews the iſſue, to what the thing tends, and what may be the end of the matter ſignified.

XVII. *Thirdly*, That whether the line ſignifies good or evil, if it be cut or croſſed by any other line, that line ſo cutting it, will at a certain time not only abate the good, but alſo take away the evil, if it ſo ſignified.

XVIII. *Fourthly*, That the nature and quality of that line thus deſtroying the ſignification of the former, is known by conſidering from what place it riſes, and to what place it tends.

XIX.

XIX. *Fifthly*, That a double judgment ariſes from every line, by accounting its riſe, firſt from the one end; ſecondly, from the other.

XX. *Sixthly*, That little lines riſing out of the ſides of any other line, both augment the things ſignified by that line; and alſo ſignifie new matter ariſing by things ſignified by the line from whence they riſe; and the place to which they point, ſhew to what they tend.

XXI. *Seventhly*, That the mounts or lines adorned with ſtars, or ſmall lines, not croſſed, or pointing to evil places, ſhew great good and happineſs to the perſon, by things ſignified by the ſame mount or line: and on the contrary, vitiated with croſſes, ſpots, or knots, ſhew much evil and perplexity.

XXII. *Laſtly*, the beginning of the lines, ſhews in the beginning or forepart of Life; the middle, in the middle part of Life; and the ends of them, the latter-part, or end of Life; ſo that if any evil or good be ſignified by any line, you muſt hint the time according to the aforeſaid reaſon.

'Tis true, here we ought to enquire into the denominated times when the things ſignified ſhould come to paſs; but becauſe that matter is ſomething long and abſtruſe (being more fit to be handled in a particular tract, wherein all its curioſities may be examined) this our preſent work being a a ſubject of another nature, and theſe things not eſſential to our purpoſe, but only added by way of appendix, we ſhall at this time forbear. Notwithſtanding, although we have not here delineated every thing in particular, yet we have laid (as it were) the ground and foundation of the Art; out of which, as out of a fountain, the induſtrious ſtudent may at his own leiſure and pleaſure, rear a ſtately fabrick.

POLYGRAPHICES

LIBER SECUNDUS.

Of ENGRAVING, ETCHING, and LIMNING.

Shewing the Inſtruments belonging to the Work; the Matter of the Work, the way and manner of performing the ſame; togewith all other Requiſites and Ornaments.

CHAP. I.

Of Graving, *and the Inſtruments thereof.*

I. *Graving* is an Art which teacheth how to transfer any deſign upon Copper, Braſs, or Wood, by help of ſharp pointed and cutting Inſtruments.

II. The chief Inſtruments are four, 1. Gravers, 2. An Oyl ſtone, 3. A Cuſhion, 4. A Burniſher.

III. Gravers are of three ſorts, round pointed, ſquare pointed, and Lozenge pointed. *The round is beſt to ſcratch withal: the ſquare Graver is to make the largeſt ſtroaks;*

ſtroaks: the Lozenge is to make ſtroaks more fine and delicate; but a Graver of a middle ſize betwixt the ſquare and Lozenge pointed, will make the ſtroaks or hatches ſhow with more life and vigour, according as you manage it in working.

IV. The Oyl-ſtone is to whet the Gravers upon; which muſt be very ſmooth, not too ſoft, nor too hard, and without pinholes.

The uſe is thus: *put a few drops of oyl Olive upon the ſtone, and laying that ſide of it, which you intend ſhall cut the Copper, flat upon the ſtone, whet it very flat and eaven; and therefore be ſure to carry your hand ſtedfaſt with an equal ſtrength, placing the forefinger firmly, upon the oppoſite ſide of the graver. Then turn the next ſide of your graver, and whet that in like manner, that you may have a very ſharp edge for an Inch or more. Laſtly, turning uppermoſt that edge which you have ſo whetted, and ſetting the end of the graver obliquely upon the ſtone, whet it very flat and ſloping in form of a Lozenge (with an exact and eaven hand) making to the edge thereof a ſharp point. It is impoſſible that the work ſhould be with the neatneſs and curioſity deſired, if the graver be not, not only very good, but alſo exactly and carefully whetted.*

V. The Cuſhion is a leather bag filled with fine ſand, to lay the plate upon, on which you may turn it every way at eaſe.

You muſt turn your plate with your left hand, according as the ſtroaks which you grave do turn, which muſt be attained with diligent care and practice.

VI. The burniſhing Iron is of uſe to rub out ſcratches and ſpecks or other things which may fault your work in the plate; as alſo if any ſtroaks be graved too deep or groſs to make them appear leſs and fainter by rubbing them therewith.

VII. To

VII. To make your Gravers.

Provide ſome Croſs-bow ſtell, and cauſe it to be beaten out into ſmall rods, and ſoftned, then with a good file you may ſhape them at pleaſure: when you have done, heat them red-hot, and ſtraight dip it into Soap, and by ſo doing it will be very hard: where note, that in dipping them into the Soap, if you turn your hand never ſo little awry, the graver will be crooked. *If your graver be too hard, take a red-hot Charcoal and lay the end of your graver upon it till it begins to wax yellowiſh, and then dip it into tallow (ſome ſay water) and it will be tougher.*

VIII. Have by you a piece of box or hard wood, that after you have ſharpned your graver, by ſtriking the point of it into the ſaid box or hard wood, you may take off all the roughneſs about the points, which was cauſed by whetting it upon the oyl-ſtone.

IX. Laſtly, take a file and touch the edge of the graver therewith; if the file cut it, it is too ſoft, and will do no good: but if it will not touch it, it is fit for your work.

If it ſhould break on the point, it is a ſign it is tempered too hard; which oftentimes after a little uſe by whetting will come into a good condition.

CHAP. II.

Of Poliſhing the Copper Plates.

I. TAke a plate of Braſs or Copper of what bigneſs you pleaſe, and of a reaſonable thickneſs, taking heed that it be free from fire flaws.

II. Beat it as ſmooth as you can with a hammer, and then rub it as ſmooth as you can, with a pumice ſtone void

void of Gravel (leſt it ſcratch it and ſo cauſe as much labour to get them out) and a little water.

III. Then drop a few drops of oyl Olive upon the plate, and burniſh it with your burniſhing Iron; and then rub it with Charcoal made of Beech wood quenched in Urine.

IV. Laſtly, with a roul made of a piece of a black felt, caſtor, or Beaver, dip'd in oyl Olive, rub it well for an hour, ſo ſhall your plate be exactly poliſhed.

CHAP. III.

Of Holding the Graver.

I. IT will be neceſſary to cut off that part of the knob of the handle of the graver which is upon the ſame line with the edge of the graver; thereby making that lower ſide next to the plate flat, that it may be no hinderance in graving.

For working upon a large plate, that part of the handle (if not cut away) will ſo reſt upon the Copper, that it will hinder the ſmooth and even carriage of your hand in making your ſtroaks, and will cauſe your graver to run into your Copper deeper than it ſhould do. This done,

II. Place the knob at the end of the handle of the Graver in the hollow of your hand, and having extended your forefinger towards the point of the Graver, laying it a top, or oppoſite to the edge which ſhould cut the plate, place your thumb on the one ſide of the Graver, and your other fingers on the other ſide, ſo as that you may guide the graver flat and parallel with the plate.

III. Be wary that your fingers interpoſe not between the

the plate and the Graver, for they will hinder you in carrying your graver level with the plate, and cauſe your lines to be more deep, groſs and rugged, than otherwiſe they would be.

CHAP. IV.

Of the way and manner of Engraving.

I. HAving a Cuſhion filled with ſand about nine inches long and ſix broad, and three or four thick, and a plate well poliſhed; lay the plate upon the Cuſhion, which place upon a firm Table.

II. Holding the Graver (as aforeſaid) according to art, in making ſtraight ſtroaks be ſure to hold your plate firm upon the Cuſhion, moving your hand, leaning lightly where the ſtroak ſhould be fine; and harder where you would have the ſtroak broader.

III. But in making circular or crooked ſtroaks, hold your hand and Graver ſtedfaſt, your arm and elbow reſting upon the table, and move the plate againſt the Graver; for otherwiſe it is impoſſible to make thoſe crooked or winding ſtroaks with that neatneſs and command that you ought to do.

IV. Learn to carry your hand with ſuch a ſlight, that you may end your ſtroak as finely as you began it; and if you have occaſion to make one part deeper or blacker than another, do it by degrees; and that you may do it the more exactly, obſerve that your ſtroaks be not too cloſe, nor too wide.

For your more exact obſervation, practiſe by ſuch prints which are more looſly ſhadowed, leſt by imitating the more dark, you ſhould not know where to begin or end.

V. After

V. After you have graved part of your work, it will be needful to ſcrape it with the ſharp edge of a burniſher or other graver, carrying it along eaven with the plate, to take off the roughneſs of the ſtroaks; but in doing it beware of making ſcratches.

VI. And that you may the better ſee that which is engraven, with the piece of Felt or Caſtor (at the fourth Section of the ſecond Chapter) dipt in oyl rub the places graven.

VII. Laſtly, whatſoever appears to be amiſs, you may rub out with the burniſher, and very exactly poliſh it with your piece of Felt or Caſtor and oyl; which done, to cleanſe the plate you may boil it a little in wine vinegar, and rub it gently with a bruſh of ſmall braſs wire or hogs briſtles.

CHAP. V.

Of the Imitation of Copies or Prints.

I. HAving a piece of Bees wax tyed up in a fine holland rag, heat the plate over the fire, till it may be hot enough to melt the wax; then rub the plate with the wax tied up in the rag, till you ſee it covered all over with wax, (which let be very thin:) if it be not eaven, heat it again by the fire, and wipe it over gently with a feather.

II. If you would coppy a printed picture, to have it print off the ſame way; then clap the print which you would imitate with the printed ſide next to the plate; and having placed it very exactly, rub the backſide of the print with a burniſher, or any thing that is hard, ſmooth and round, which will cauſe it to

to ſtick to the wax upon the plate: then take off the print (beginning at one corner) gently and with care, leſt you tear it (which may be cauſed alſo by putting too much wax upon the plate) and it will leave upon the wax the perfect proportion in every part.

Where note, if it be an old picture, before you place it upon the wax, it will be good to trace it over in every limb with a black-lead penſil.

III. But if you would have it print the contrary way; take the duſt of black-lead, and rub the backſide of the print all over therewith, which black ſide put upon the waxed plate; and with your needle or drawing point, draw all the out-lines of the deſign or print, all which you will find upon the wax. This done,

IV. Take a long graver either Lozenge or round (which is better) very ſharp, and with the point thereof ſcratch over every particular limb in the outſtrokes; which done, it will not be difficult to mark out all the ſhadows as you engrave, having the proportion before you.

V. Laſtly, for Coppies or Letters, go over every letter with black-lead, or write them with ungumm'd Ink, and clap the paper over the waxed plate as before.

CHAP. VI.

Of Engraving in Wood.

THe figures that are to be carved or graven in wood muſt firſt be drawn, traced, or paſted upon the wood; and afterwards all the other ſtanding of the wood (except the figure) muſt be cut away with

with little narrow pointed knives made for that purpose.

This graving in wood is far more tedious and difficult than that in Brass or Copper; because you must cut twice or thrice to take out one stroak; and having cut it, to be careful in picking it out, lest you should break any part of the work, which would deface it.

II. For the kind of the wood let it be hard and tough: the best for this purpose is Beech and Box: let it be plained inch thick, which you may have cut into pieces according to the bigness of the figure you grave.

III. To draw the figures upon the wood.

Grinde white Lead very fine, and temper it with fair water; dip a cloth therein, and rub over one side of the wood, and let it dry throughly: This keepeth the Ink (if you draw therewith) that it run not about, nor sink: and if you draw with Pastils, it makes the stroaks appear more plain and bright.

IV. Having whited the wood as before (if it is a figure you would copy) black or red the blank side of the print or copy, and with a little stick or swallows quill, trace or draw over the stroaks of the figure.

V. But if you paste the figure upon the wood, you must not then white it over (for then the figure will pill off) but only see the wood be well plained: then wipe over the printed side of the figure with Gum Tragacanth dissolved in fair water, and clap it smooth upon the wood, which let dry throughly: then wet it a little all over, and fret off the paper gently, till you can see perfectly every stroak of the figure: dry it again, and fall to cutting or carving it.

CHAP.

CHAP. VII.

Of Etching, *and the Materials thereof.*

I. *Etching* is an artificial Engraving of Braſs or Copper plates with *Aqua fortis.*

II. The Inſtruments of Etching (beſides the plate) are theſe nine. 1. *Hard Varniſh.* 2. *Soft Varniſh.* 3. Prepared Oyl. 4. Aqua fortis. 5. Needles. 6. Oyl-ſtone. 7. *Bruſh-penſil.* 8. *Burniſher.* 9. The Frame and Trough.

III. *To poliſh the Plate.*

Although in chap. 2. of this Book, we have ſufficiently taught how to poliſh the Plate, yet nevertheleſs we think it convenient to ſubjoyn theſe following words. Firſt, the Plate being well planiſhed or forged, choſe the ſmootheſt ſide to poliſh; then fix it upon a board a little declining, and rub it firmly and evenly all over with a piece of Grindſtone, throwing water often on it, ſo long till there be no dints, flaws or marks of the hammer: waſh it clean, and with a piece of good Pumice ſtone, rub it ſo long till there be no rough ſtroaks or marks of the Grindſtone: waſh it clean again, and rub it with a fine Hoan and water, till the marks of the pumice ſtone are rubbed out: waſh it again, and with a piece of Charcoal without knots (being heat red hot and quenched in water, the outſide being pared off) rub the plate with water till all the ſmall ſtroaks of the Hoan be vaniſhed; laſtly, if yet there remain any ſmall ſtroaks or ſcratches, rub them out with the end of the burniſhing Iron, ſo ſhall the Plate be fitted for work.

IV. *To make the hard Varniſh for Etching.*

Take Greek or Burgundy Pitch, Colophonium or Rozin,

Rozin, of each five ounces, Nut-oyl four ounces; melt the Pitch and Rozin in an earthen pot upon a gentle fire; then put in the Oyl, and let them boil for the ſpace of half an hour: Cool it a little upon a ſofter fire till it appear like a Glewy ſyrrup: cool it a little more, ſtrain it, and being almoſt cold, put it into a Glaſs bottle for uſe. Being thus made it will keep at leaſt twenty years.

V. *To make the ſoft Varniſh for Etching.*

Take Virgin-wax three ounces, Maſtich in drops two ounces, Aſphaltum one ounce: grind the Maſtich and Aſphaltum ſeverally very fine; then in an Earthen pot melt the Wax, and ſtrew in the Maſtich and Aſphaltum, ſtirring all upon the fire till they be well diſſolved and mixed, which will be in about half a quarter of an hour; then cooling it a little, pouring it into a baſin of fair water (all except the dregs) and with your hands wet (before it is cold) form it into rouls.

VI. *To make the prepared Oyl.*

Take Oyl Olive, make it hot in an Earthen pot, and put into it a ſufficient quantity of tried ſheeps ſuet (ſo much as being dropped upon a cold thing, the oyl may be a little hardened and firm) boil them together for an hour, till they be of a reddiſh colour, leſt they ſhould ſeparate when you uſe them. This mixture is to make the fat more liquid, and not cool ſo faſt, for the fat alone would be no ſooner on the pencil, but it would grow cold; and be ſure to put in more oyl in Winter than in Summer.

VII. *To make the Aqua fortis.*

Take diſtilled White-wine Vinegar three pints; Sal Armoniack, Bay-ſalt, of each ſix ounces; Vertegrieſe four ounces. Put all together into a large well glazed earthen pot (that they may not boil over) cover the

pot close, and put it on a quick fire, and let it speedily boil two or three great walms and no more; when it is ready to boil, uncover the pot, and stir it sometimes with a stick, taking heed that it boil not over; having boiled, take it from the fire, and let it cool being close covered, and when it is cold, put it into a glass bottle with a glass stopple: If it be too strong in Etching, weaken it with a glass or two of the same Vinegar you made it of. There is another sort of Aqua fortis, which is called Common, which is exhibited in *Synopsis Medicinæ*, *lib.* 3. *cap.* 7. *sect.* 4. *pag.* 656. But because that Book may not be in every mans hand, we will here insert it; it is thus: Take dried Vitriol two pound, Salt-peter one pound; mix them and distil by a Retort, in open fire by degrees.

VIII. *To make the Etching Needles.*

Chose Needles of several sizes, such as will break without bending, and of a fine grain; then take good round sticks of firm wood (not apt to split) about six inches long, and as thick as a large Goose quill, at the ends of which fix your Needles, so that they may stand out of the sticks about a quarter of an inch or something more.

IX. *To whet the points of the Needles with the Oyl stone.*

If you would have them whetted round, you must whet their points short upon the oyl stone, (not as sowing Needls are) turning them round whilst you whet them, as Turners do. If you whet them sloping, first make them blunt upon the oyl stone, then holding them firm and steady, whet them sloping upon one side only, till they come to a short and roundish oval.

X. The Brush pencil is to cleanse the work, wipe off dust, and to strike the Colours eaven over the ground or varnish, when laid upon the Plate.

XI. The burnisher is a well hardened piece of steel somewhat

ſomewhat roundiſh at the end. Its uſes are what we have ſpoken at the ſixth Section of the firſt Chapter, and the third Section of the ſecond Chapter.

XII. *To make the Frame and Trough.*

The Frame is an entire board, about whoſe top and ſides is faſtned a ledge two Inches broad, to keep the *Aqua fortis* from running off from the ſides when you pour it on: the lower end of this board muſt be placed in the Trough, leaning ſloping againſt a wall or ſome other thing, wherein you muſt fix ſeveral pegs of wood to reſt the plate upon. The Trough is made of a firm piece of Elm or Oak ſet upon four legs, whoſe hollow is four Inches wide; and ſo long as may beſt fit your uſe: the hollow muſt be ſomething deeper in the middle, that the water running thither may fall through a hole (there made for that purpoſe) into an earthen pan well leaded. *The inſide of this board and trough muſt be covered over with a thick oyl colour, to hinder the* Aqua fortis *from eating or rotting the board.*

CHAP. VIII.

The way and manner of uſing the hard Varniſh.

I. HAving well heat the poliſhed Plate over a chafing-diſh of coals, take ſome of the firſt varniſh with a little ſtick, and put a drop of it on the top of your finger, with which lightly touch the Plate at equal diſtances, laying on the varniſh equally, and heating the plate again as it grows cold, keeping it carefully from duſt or filth; then with the ball of your thumb tap it upon the plate; ſtill wiping your hand over all, to make it more ſmooth and equal.

And here beware that neither the varniſh be too thick upon the plate, nor your hand ſweaty.

II. Then take a great lighted candle burning clear, with a ſhort ſnuff, (placing the corner of the plate againſt a wall) hold the varniſhed ſide downward over the candle, as cloſe as you can, ſo it touch not the Varniſh, guiding the flame all over, till it is all perfectly black; which you muſt keep from duſt or filth till it is dry.

III. Over a fire of Charcoals hang the varniſhed plate to dry with the varniſh upwards, which will ſmoak; when the ſmoak abates, take away the plate, and with a pointed ſtick ſcratch near the ſide thereof, and if the varniſh eaſily comes off, hang it over the fire again a little, ſo long till the Varniſh will not too eaſily come off; then take it from the fire and let it cool.

If the varniſh ſhould be too hard, caſt cold water on the back-ſide of the plate to cool it, that the heat may not make it too hard and brittle. This done,

IV. Place it upon a low desk, or ſome ſuch like thing, and cover that part which you do not work on, with a ſheet of fine white paper, and over that a ſheet of brown paper, on which may reſt your hand, to keep it from the varniſh.

V. If you uſe a ruler, lay ſome part of it upon the paper, that it may not rub off the varniſh; and have an eſpecial care, that no duſt or filth get in between the paper and the varniſh, for that will hurt it.

CHAP.

CHAP. IX.

The way and manner of Etching.

I. IN making lines or hatches, ſome bigger, ſome leſſer, ſtraight or crooked, you muſt uſe ſeveral ſorts of needles, bigger or leſſer as the work requires.

II. The great lines are made by leaning hard on the needle; its point being ſhort and thick, (but a round point will not cut the varniſh clear:) or, by making divers lines or hatches, one very cloſe to another, and then by paſſing over them again with a thicker needle; or, by making them with an indifferent large needle, and letting the *Aqua fortis* lie the longer thereon.

The beſt needles for this work are ſuch as are whet ſloping with an oval, becauſe their ſides will cut that which the round ones will not.

III. If your lines or hatches ought to be of an equal thickneſs from end to end, lean on the needle with an equal force; leaning lightly where you would have the lines or ſtroaks fine or ſmall; and more heavy where you would have the line appear deep or large; thereby the needle may have ſome Impreſſion in the Copper.

IV. If your lines or hatches be too ſmall, paſs over them again with a ſhort round point, of ſuch a bigneſs as you would have the line of, leaning ſtrongly where you would have the line deep.

V. The manner of holding the needle with Oval points (which are moſt proper to make large and deep ſtroaks) is much like that of a pen, only the flat ſide whetted is uſually held towards the thumb: but they may be uſed with the face of the Oval turned toward the middle finger.

VI. If you would end with a fine ſtroak, you ought to do that with a very fine needle.

VII. In uſing the Oval points, hold them as upright and ſtraight in your hand as you can, ſtriking your ſtroaks firmly and freely, for that will add much to their beauty and clearneſs.

VIII. In Landskips, in places fartheſt from the ſight, as alſo neareſt the light, uſe a very ſtender point, leaning ſo lightly with your hand as to make a ſmall faint ſtroak.

IX. In working be careful to bruſh off all the duſt which you work off with the needles.

CHAP X.

Of uſing the Aqua fortis.

I. IF there be any ſtroaks which you would not have the *Aqua fortis* eat into; or any places where the varniſh is rubbed off, melt ſome prepared Oyl, and with a pencil, cover thoſe places pretty thick.

II. Then take a bruſh, pencil, or rag, and dip it in the prepared oyl, and rub the back ſide of the plate all over, that the *Aqua fortis* may not hurt it, if by chance any ſhould fall thereon.

III. Before you put the *Aqua fortis* to the plate, gently warm or dry the plate by a fire to dry up the humidity, which it might contract by reaſon of the Air; and to prevent the breaking up the Varniſh upon the firſt pouring the *Aqua fortis* thereon.

IV. Place the plate by the 12th. Section of the 7th. Chapter of this book, and with the *Aqua fortis* in an Earthen pot pour upon the plate, begining at the top,

ſo

ſo moving your hand that it may run all over the plate, which do for eight or ten times: then turn it corner-wiſe, and pour the *Aqua fortis* on it that way ten or twelve times; and then turn it again corner-wiſe the other way, pouring on the *Aqua fortis* eight or ten times as before; doing thus ſeveral times for the ſpace of half a quarter of an hour or more, according to the ſtrength of the water, and nature of the Copper.

For there muſt be leſs time allowed to hard and brittle Copper for pouring on the Aqua fortis, *but more to the ſoft.*

V. But you muſt have ſpecial regard to caſt on the *Aqua fortis* as occaſion ſhall require, and work is; caſting it on at ſeveral times, and on ſeveral places; where you would have it very deep, often; where leſs deep fewer times: where light, leſs yet; where lighter, leſſer yet: and where ſo light as it can ſcarcely be ſeen, once or twice: waſh it with water, and cover it where you would have it lighter.

VI. Having thus covered your plates as occaſion requires; for the ſecond time, place the plate on the frame as aforeſaid, and pour on it your *Aqua fortis* for a full half hour.

VII. Then waſh it with water and dry it, covering the places which require lightneſs or faintneſs (that they may be proportionable to the deſign) then pour on the *Aqua fortis* for the laſt time more or leſs according to the nature of your work, and the deepneſs that it requires.

VIII. You may rub off the varniſh or ground, as occaſion in your work requires with a Charcoal, to ſee whether the water hath eaten deep enough; by which you may judge of the ſpace of time, that you are after to employ in pouring on the *Aqua fortis*, in the works you will have to do, which if the ſhadows

require much depth, or ought to be very black, the water ought to be poured on (at the leaſt time) for an hour or better; yet know *no certain rule of time can be limited for this.*

CHAP. XI.

Of Finiſhing the Work.

I. ALL the former operations being done, waſh the Plate with fair water; and put it wet upon the fire, till the mixture be well melted, and then wipe it very clean on both ſides with a linnen cloth, till you have cleanſed it of all the mixture.

II. Take Charcoal of Willow, take off the rind of it, and putting fair water on the plate, rub it with the Charcoal, as if you were to poliſh it, and it will take off the varniſh.

Where note, that the Coal muſt be free from all knots and roughneſs, and that no ſand or filth fall upon the plate.

III. Take ordinary *Aqua fortis*, to which add two third parts of water, and with ſome linnen rags dipped therein, rub the Plate all over, ſo will you take away its diſcolouring, and recover its former beauty.

IV. Then take dry linnen rags, and wipe the plate ſo as to take off all the aforeſaid water, and then holding it a little to the fire, put upon it a little oyl olive, and with a piece of an old Beaver rolled up rub the plate well all over, and laſtly wipe it well with a dry cloth.

V. Then if any places need touching with the Graver, as ſometimes it happens, eſpecially where it

is

is to be very deep or black, perfect them with care; which done, the plate is ready for the Rolling Preſs.

CHAP. XII.

The way of uſing the ſoft Varniſh.

THE Plate being prepared by cleanſing it with a Charcoal and clean water, waſh it well and dry it, then with fine white Chalk ſcraped and a fine rag, rub it well over, not touching it with your fingers.

II. Lay down your plate over a Chafing-diſh of ſmall coal, yet ſo as the fire may have air; then take the Ground or ſoft Varniſh (it being tyed up in a fine rag) and rub it up and down the Copper, ſo as it may ſufficiently cover it, (not too thin nor too thick:) then take a feather and ſmooth it as well as poſſibly you can all one way, and then croſs it, till it lie very well.

But you muſt take heed that the Plate be not too hot, for if it lie till the Ground ſmoak, the moiſture will be dried up, and that will ſpoil the work, and make the Ground break or fly up.

III. Then grind ſome white Lead with Gum water, ſo that it may be of a convenient thickneſs to ſpread on the Copper; and with a large pencil, or ſmall bruſh, ſtrike the Plate croſs over, twice or thrice till it is ſmooth; and then with a larger bruſh (made of Squirrels tails) gently ſmooth the white, and then let it lie till it is drie.

IV. Or

IV. Or you may black the Varniſh with a candle, as we taught at the ſecond Section of the eighth Chapter, and then warm it over the fire, till the varniſh begin to melt.

CHAP. XIII.

The way of Etching upon the ſoft Varniſh.

I. THE way of Etching is the ſame with that in the hard Varuiſh; only you muſt be careful not to hurt your varniſh, which you may do by placing on the ſides of your plate two little boards, and laying croſs over them another thin one, ſo as that it may not touch the plate, on which you muſt reſt your hand whilſt you work.

II. Then place the plate on a Desk (if you ſo pleaſe) for by that means the ſuperfluous matter will fall away of it ſelf.

III. But if you have any deſign to transfer upon the plate from any Copy or Print, ſcrape on the backſide thereof ſome red Chalk all over; then go over that, by ſcraping ſome ſoft Charcoal, till it mingle with the Chalk; and with a large ſtiff pencil rub it all over till it be fine and eaven, and ſo lay down the deſign upon the plate: with a blunt Needle draw over the out ſtroaks: *and as you work, you need not ſcratch hard into the Copper, only ſo as you may ſee the Needle go through the Varniſh to the Copper.*

IV. Always be ſure when you leave the work, to wrap the Plate up in Paper, to keep it from hurt, and corrupting in the air, which may drie the varniſh: and in Winter time wrap the Plate up in a piece of wollen, as well as paper; for if the froſt get to it,

it, it will cauſe the Varniſh to riſe from the Copper in the eating.

An inconveniency alſo will accrew, by letting the Varniſh lie too long upon the Plate before the work is finiſhed; for three or four moniks will conſume the moiſture and ſo ſpoil all.

V. The marking of the deſign upon the ſoft varniſh, is beſt done with black Lead or Chalk, if the ground is white; but with red Chalk, if the ground is black.

VI. Having graved what you intend upon the varniſh, take ſome fair water, a little warm, and caſt it upon the plate; and then with a ſoft clean Sponge, rub upon the white Lead to moiſten it all over; and then waſh the plate to take away the whiting, and drie it.

VII. Or laſtly, with *Aqua fortis* mixed with fair water, waſh it all over, and by this means you may take away the whiting, which then waſh with common water and drie it; and thus have you the plate prepared for the *Aqua fortis*.

CHAP. XIV.

Of uſing the Aqua fortis, and finiſhing the work.

I. Put ſoft Wax (red or green) round the brims of the Plate, and let it be raiſed above the varniſh about half a Barley corns length; ſo that placing the plate level, the water being poured upon the Plate may by this means be retained. This done,

II. Take common *Aqua fortis* ſix ounces, Common water two ounces; mix them, and pour it gently upon

upon the plate, ſo that it may cover it fully all over; ſo will the ſtronger hatchings be full of bubbles, while the fainter will appear clear for a while, not making any ſudden operations to the view.

III. When you perceive the water to operate a ſmall time, pour it off into a glazed earthen diſh, and throw fair water upon the Plate, to waſh away the *Aqua fortis*, then drie the plate: and where you would have the Cut to be faint, tender or ſweet, cover it with the prepared Oil, and then cover the Plate again with *Aqua fortis* as before, leaving it on for eight or ten minutes, or longer: then put off the *Aqua fortis* as before, waſhing and drying the Plate, and covering with the prepared Oyl other places which you would not have ſo deep as the reſt: Laſtly, put on the *Aqua fortis* again, for the ſpace of half an hour (more or leſs) and then pour it off, waſhing the plate with fair water as before.

As you would have your lines or ſtrokes to be deeper and deeper, ſo cover the ſweeter or fainter parts by degrees with the prepared oyl, that the Aqua fortis may lie the longer on the deep ſtroaks. Then

IV. Take off the border of Wax, and heat the plate, ſo that the oyl and varniſh may throughly melt; which wipe away well with a linnen cloth: then rub the plate over with oyl Olive and a piece of an old beaver roll'd up, which done, touch it with the Graver where need is.

V. But if any thing be (at laſt) forgotten; then rub the plate aforeſaid with crums of bread, ſo well that no filth or oyl remain upon the Plate.

VI. Then heat the plate upon a Charcoal fire, and ſpread the ſoft varniſh with a feather upon it (as before) ſo that the hatchings may be filled with varniſh; black it, and then touch it over again, or add what you intend.

VII. Let

VII. Let your hatchings be made by means of the Needles, according as the manner of the work ſhall require, being careful before you put on the *Aqua fortis*, to cover the firſt graving on the Plate with the prepared Oyl (leſt the Varniſh ſhould not have covered all over:) then cauſe the *Aqua fortis* to eat into the work; and laſtly cleanſe the Plate as before.

CHAP. XV.

Of Limning, *and the Materials thereof.*

I. LImning is an Art whereby in water Colours, we ſtrive to reſemble Nature in every thing to the life.

II. The Inſtruments and Materials thereof are chiefly theſe. 1. *Gums.* 2. *Colours.* 3. *Liquid Gold and Silver.* 4. *The Grindſtone and Muller.* 5. *Pencils.* 6. *Tables to Limn in.* 7. *Little glaſs or China diſhes.*

III. The *Gums* are chiefly theſe four, Gum Arabick, Gum Lake, Gum Hedera, Gum Armoniack.

IV. The principal *Colours* are theſe ſeven, *White, Black, Red, Green, Yellow, Blew, Brown:* out of which are made mixt or compound Colours.

V. The *Liquid Gold and Silver* is either natural or artificial.

The natural is that which is produced of the Metals themſelves: the Artificial is that which is formed of other colours.

VI. The *Grinding ſtone, Muller, Pencils, Tables, and Shells, or little China diſhes* are only the neceſſary inſtruments and attendants, which belong to the practice of Limning.

CHAP.

CHAP. XVI.

Of the Gumms and their Uſe.

I. THe chief of all is *Gum-Arabick*, that which is white, clear and brittle; the Gum-water of it is made thus:

Take Gum-Arabick, bruiſe it and tie it up in a fine clean linnen cloath, and put it into a convenient quantity of pure ſpring-water, in a glaſs or earthen veſſel; letting the Gum remain there till it is diſſolved; which done, if the water is not ſtiff enough, put more Gum into the cloath; but if too ſtiff, add more water: of which Gum-water have two ſorts by you, the one ſtrong, the other weak; of which you may make a third at pleaſure.

But if you be where Gum-Arabick is not to be got, you may inſtead of that uſe the preparation of ſheeps leather or parchment following.

Take of the ſhreds of white ſheep-skins (which are to be had plentifully at Glovers) or elſe of parchments, one pound; Conduit or running-water two quarts, boyl it to a thin gelly, then ſtrain it whilſt hot through a fine ſtrainer, and ſo uſe it.

II. *Gum-lake*; it is made of whites of Eggs beaten and ſtrained, a pint, Honey, Gum-hedera of each two Drachms, ſtrong wort four ſpoonfuls, mix them, and ſtrain them with a piece of ſponge till they run like a clear oyl, which keep in a clean veſſel till it grows hard.

This Gum will diſſolve in water like Gum-Arabick, of which Gum-water is made in like manner; it is a good ordinary Varniſh for Pictures.

III. *Gum-Hedera*, or Gum of Ivy; it is gotten out of Ivy, by cutting with an Axe a great branch thereof, climbing

climbing upon an Oak-tree, and bruiſing the ends of it with the head of the Axe; at a Months end, or thereabouts, you may take from it a very clear, and pure fine Gum, like oyl.

It is good to put into gold ſize and other colours, for theſe three reaſons: 1. *It abates the ill ſcent of the ſize:* 2. *It will prevent bubbles in gold ſize and other colours:* 3. *Laſtly, it takes the fat and clammineſs off colours: beſides which it is of uſe in making Pomanders.*

IV. *Gum Armoniacum*, It is a Forrein Gum, and ought to be brought ſtrained. *Grind it very fine with juyce of Garlick and a little Gum-Arabick water, ſo that it may not be too thick, but that you may write with it what you will:*

When you uſe it, draw what you will with it, and let it dry; and when you gild upon it, cut your Gold or Silver, to the faſhion which you drew with the ſize or gum; then breath upon the ſize, and lay the Gold upon it gently taken up, which preſs down hard with a piece of wool; and then let it well dry; being dryed, with a fine linnen cloath ſtrike off the looſe gold; ſo will what was drawn be fairly gilded if it was as fine as a hair: it is called Gold Armoniack.

CHAP. XVII.

Of the ſeven Colours in General.

I. THe chief *Whites* are theſe, Spodium, Ceruſe, White-lead, Spaniſh-white, Egg-ſhels burnt. *This Colour is called in Greek* λευκὸς *of* λεύσσω, video, *to ſee, becauſe* λευκοτὴς ὄτι διακριτικὸν ὄψεως, *whiteneſs (as* Ariſtotle *ſaid) is the object of ſight, in Latine* Albus, *from whence the* Alps *had their name, by reaſon of their*

their continual whiteneſs with Snow. The Spaniſh-white is thus made. Take fine Chalk three Ounces, Alom one Ounce, grind them together with fair water, till it be like pap; roul it up into balls, which dry leiſurely: then put them into the fire till they are red hot; take them out, and let them cool: *it is the beſt white of all, to garniſh with, being ground with weak gum-water.*

II. The chief *Blacks* are theſe, Hartſhorn burnt, Ivory burnt, Cherry-ſtones burnt, Lamp-black, Charcoal.

Black, in Latine Niger *is ſo called from the Greek word* νεκρὸς, *which ſignifies dead, becauſe putrified and dead things are generally of that colour.* Lamp-black *is the ſmoak of a Link, Torch or Lamp gathered together.*

III. The chief *Reds* are theſe; Vermilion, Red-lead, Indian-lake, Red-oker. *It is called in Latin* Ruber ἀπὸ τὴν ῥοὴν à corticibus vel granis mali punici; *from the Rinds or Seeds of Pomegranates, as* Scaliger *ſaith.*

IV. The chief *Greens* are theſe; Green Bice, Verdegrieſe, Verditure, Sapgreen. *This colour is called in Latine* Viridis *from* Vires: *in Greek* χλωρὸν à χλόη, *Graſs or Green herb, which is of this Colour.*

V. The chief *Yellows* are theſe; Orpiment, Maſticot, Saffron, Pink yellow, Oker de luce. *This colour is called in Latine* Flavus, Luteus; *in Greek* ξανθὸς, *which is* Homer's *Epithete for* Menelaus, *where he calls him* ξανθὸς Μενέλαος.

VI. The chief *Blews* are Ultramarine, Indico, Smalt, Blew bice. *This colour is called in Latine* Cæruleus, *in Greek* Κυάνεος à Κύανος, *the name of a ſtone, which yields* Ultramarine.

VII. The chiefeſt *Browns* are Umber, Spaniſh-brown, Colens Earth. *It is called in Latine* Fuſcus, quaſi φῶς σκιᾶται, *from darkening the Light, in Greek* φαιὸς.

CHAP.

CHAP. XVIII.

Of Colours in Particular.

I. *Ceruſe*, Grind it with glair of Eggs, and it will make a moſt perfect white.

II. *White-lead*, Grind it with a weak water of Gum-lake, and let it ſtand three or four days, after which if you mix with it Roſet and Vermilion, it makes a fair Carnation.

III. *Spaniſh-white*, It is the beſt white of all, to garniſh with, ground with weak Gum-water.

IV. *Lamp black*, ground with Gum-water, it makes a good black.

V. *Vermilion*, Grind it with the glair of an Egg, and in the grinding put a little clarified honey, to make its colour bright and perfect.

VI. *Sinoper-lake*, it makes a deep and beautiful red, or rather purple, almoſt like unto a Red-roſe. Grind it with Gum-lake and Turnſole water: if you will have it light, add a little Ceruſe, and it will make it a bright Crimſon; if to Diaper, add only Turnſole water.

VII. *Red-lead*, Grind it with ſome Saffron, and ſtiff Gum-lake; for the Saffron makes it orient, and of a Marigold colour.

VIII. *Turnſole*, Lay it in a Sawcer of Vinegar, and ſet it over a chafing-diſh of coals; let it boil, then take it off, and wring it into a Shell, adding a little Gum-Arabick, let it ſtand till it is diſſolved: It is good to ſhadow Carnation, and all Yellows.

IX. *Roſet*, Grind it with Brazil-water, and it will make a deep purple: put Ceruſe to it, and it will be lighter; grind it with Litmoſe, and it will make a fair Violet.

X. *Spaniſh brown*, Grind it with Brazil-water: mingle it with Ceruſe and it makes a horſe-fleſh Colour.

XI. *Bole Armoniack*, It is a faint Colour; its chief uſe is, in making ſize for burniſh'd gold.

XII. *Green bice*, Order it as you do blew bice; when it is moyſt, and not through dry, you may diaper upon it with the water of deep green.

XIII. *Verdegrieſe*, Grind it with juyce of Rue, and a little weak gum-water, and you will have a moſt pure green: if you will diaper with it, grind it with Lye of Rue (or elſe the decoction thereof) and there will be a hoary green: Diaper upon Verdegrieſe green with ſap-green: alſo Verdegrieſe ground with white Tartar, and then tempered with gum-water, gives a moſt perfect green.

XIV. *Verditure*, grind it with a weak Gum-Arabick water: it is the fainteſt green that is, but is good to lay upon black, in any kind of drapery.

XV. *Sap-green*, lay it in ſharp vinegar all night; put it into a little Alom to raiſe its colour, and you will have a good green to diaper upon other greens.

XVI. *Orpiment*, *Arſenicum* or *Auripigmentum*, grind it with a ſtiff water of Gum-lake, becauſe it is the beſt colour of it ſelf; it will lie upon no green, for all greens, white and red lead, and Ceruſe ſtain it: wherefore you muſt deepen your colours ſo that the Orpiment may be higheſt, and ſo it may agree with all Colours.

XVII. *Maſticot*, Grind it with a ſmall quantity of Saffron in gum-water, and never make it lighter than it is: it will endure to lie upon all colours and metals.

XVIII. *Saffron*, Steep it in Glair: it may be ground with Vermilion.

XIX. *Pink-yellow*, If you would have it ſad coloured, grind it with Saffron; if light, with Ceruſe: mix it with weak gum-water, and ſo uſe it.

XX. *Oker*

XX. *Oker de Luce*, Grind it with pure Brazil-water: it makes a paſſing hair colour; and is a natural ſhadow for gold.

XXI. *Umber*, It is a more ſad colour. Grind it with gum-water, or gum-lake; and lighten it (if you pleaſe) with a little Ceruſe and a blade of Saffron.

XXII. *Ultramarine*, If you would have it deep, grind it with Litmoſe-water; but if light, with fine Ceruſe, and a weak Gum-Arabick water.

XXIII. *Indico*, Grind it with water of Gum-Arabick, as Ultramarine.

XXIV. *Blew bice*, Grind it with clean water, as ſmall as you can, then put it into a ſhell, and waſh it thus: put as much water to it as will fill up the veſſel or ſhell, and ſtir it well, let it ſtand an hour, and the filth and dirty water caſt away; then put in more clean water, do thus four or five times; and at laſt put in Gum-Arabick water ſomewhat weak, that the Bice may fall to the bottom; pour off the gum-water, and put more to it, waſh it again, drie it, and mix it with weak gum-water (if you would have it riſe of the ſame colour) but with a ſtiff water of Gum-lake, if you would have a moſt perfect blew; if a light blew, grind it with a little Ceruſe; but if a moſt deep blew, add water of Litmoſe.

XXV. *Smalt*, Grind it with a little fine Roſet, and it will make a deep Violet: and by putting in a quantity of Ceruſe, it will make a light Violet.

XXVI. *Litmoſe blew*, Grind it with Ceruſe: with too much Litmoſe it makes a deep blew; with too much Ceruſe, a light blew: grind it with the weak water of Gum-Arabick.

Take fine Litmoſe, cut it in pieces, lay it in weak water of Gum-lake for twenty four hours, and you ſhall have a water of a moſt perfect Azure; with which water you may

Diaper and Damask, upon all other blews, to make them shew more fair and beautiful.

XXVII. *Orchal*, Grind it with unslak'd Lime and Urine, it makes a pure Violet: by putting to more or less Lime, you may make the Violet light or deep as you please.

CHAP. XIX.

Of Mixt and Compound Colours.

I. *Murry*, It is a wonderful beautiful colour, composed of purple and white: it is made thus. Take *Sinaper-lake two ounces; white Lead one ounce; grind them together.* See the 24 Section.

II. *A Glass grey*, Mingle Ceruse with a little Azure.

III. *A Bay colour*, Mingle Vermilion with a little Spanish brown and black.

IV. *A deep Purple*, It is made of Indico, Spanish brown and white.

It is called in Latine Purpureus, *in Greek* πορφύρεος *from* πόρφυρος, *a kind of shell fish that yields a liquour of that colour.*

V. *An Ash colour, or Grey*, It is made by mixing white and Lamp-black; or white with Sinaper, Indico and black make an Ash colour.

It is called in Latine Cæsius, *and* color Cinerius; *in Greek* γλαυκὸς and τεφρώδης.

VI. *Light Green*, It is made of Pink and Smalt; with white to make it lighter if need require.

VII. *Saffron colour*, It is made of Saffron alone by infusion.

VIII. *Flame colour*, It is made of Vermilion and Orpiment,

Orpiment, mixed deep or light at pleaſure: or thus' Take red Lead and mix it with Maſticote, which heighten with white.

IX. *A Violet Colour*, Indico, white and Sinaper Lake make a good Violet. So alſo Ceruſe and Litmoſe, of each equal parts.

X. *Lead colour*, It is made of White mixed with Indico.

XI. *Scarlet colour*, It is made of Red Lead, Lake, Vermilion: yet Vermilion in this caſe is not very uſeful.

XII. *To make Vermilion.*

Take Brimſtone in powder one ounce, mix it with Quickſilver a pound, put it into a Crucible well luted, and upon a Charcoal fire heat it till it is red hot; then take it off and let it cool.

XIII. *To make a bright Crimſon.*

Mix tincture of Brazil with a little Ceruſe ground with fair water.

XIV. *To make a ſad Crimſon.*

Mix the aforeſaid light Crimſon with a little Indico ground with fair water.

XV. *To make a pure Lake.*

Take Urine twenty pound, boil it in a Kettle and ſcum it with an Iron Scummer till it comes to ſixteen pound; to which add gum Lake one pound, Alom five ounces; boil all till it is well coloured, which you may try by dipping therein a piece of linnen cloth; then add ſweet Alom in powder a ſufficient quantity, ſtrain it and let it ſtand; ſtrain it again through a dry cloth till the liquor be clear: that which remains in the cloth or bag is the pure Lake.

XVI. *To make a Crimſon Lake.*

It is uſually made of the flocks ſhorn off from Crimſon cloth by a Lye made of Salt-peter, which extracts the colour; which precipitate,

edulcorate, and dry in the Sun or a Stove.

XVII. *A pure Green.*

Take white Tartar and Verdegrieſe, temper them with ſtrong white Wine Vinegar, in which a little gum Arabick hath been diſſolved.

XVIII. *A pure Violet.*

Take a little Indico and tincture of Brazil, grind them with a little Ceruſe.

XIX. *A pure Purple colour.*

Take fine Brimſtone an ounce and an half, Quickſilver, Sal Armoniack, Jupiter, of each one ounce; beat the Brimſtone and Salt into powder, and make an Amalgamie with the Quickſilver and Tinn, mix all together, which put into a great glaſs Goard; make under it an ordinary fire, and keep it in a conſtant heat for the ſpace of ſix hours.

XX. *To make a Yellow Colour.*

Take the yellow chives in white Lilies, ſteep them in gum water, and it will make a perfect yellow; the ſame from Saffron and Tartar tempered with gum water.

XXI. *To make a Red colour.*

Take the roots of the leſſer Bugloſs, and beat them, and ſtrain out the juice, and mix it with Alom water.

XXII. *To make excellent good Greens.*

The Liver of a Lamprey makes an excellent and durable graſs green: and yellow laid upon blew will change into green: ſo likewiſe the juice of a blew Flower-de-luce, mixed with gum water, will be a perfect and durable green or blew, according as it is uſed.

XXIII. *To make a Purple colour.*

Take the juice of Bilberries and mix it with Alom and Galls, and ſo paint with it.

XXIV. *To make a good Murry.*

Temper Roſſet with a little Roſe water, in which a little

little gum hath been diſſolved, and it will be good; but not exceeding that at the firſt Section of this Chapter.

XXV. *To make Azure or Blew.*

Mix the Azure with glew water, and not with gum water.

XXVI. *To make a Yellow, Green, or Purple.*

Buckthorn Berries gathered green and ſteeped in Alom water yield a good yellow: but being through ripe and black (by the eighteenth Section of the twenty firſt Chapter of the third Book) they yield a good green: and laſtly, being gathered when they are ready to drop off, which is about the middle or end of November, their juice mixt with Alom water yields a good purple colour.

CHAP. XX.

Of Colours for Drapery.

I. FOR *Yellow garments.* Take Maſticot deepned with brown Oker and red Lead.

II. *For Scarlet.* Take Vermilion deepned with Sinaper lake, and heightned with touches of Maſticot.

III. *For Crimſon.* Lay on Lake very thin, and deepen with the ſame.

IV. *For Purple.* Grinde Lake and Smalt together: or take blew Bice, and mix it with red and white Lead.

V. *For an Orient Violet.* Grind Litmoſe, blew Smalt, and Ceruſe; but in mixture let the blew have the upper hand.

VI. *For Blew.* Take Azure deepned with Indie blew; or Lake heightned with white.

VII. *For black Velvet.* Lay the garment firſt over

with Ivory black, then heighten it with Cherryſtone black, and a little white.

VIII. *For black Sattin.* Take Cherryſtone black; then white deepned with Cherryſtone black; and then laſtly, Ivory black.

IX. *For a pure Green.* Take Verdegrieſe, bruiſe it, and ſteep it in Muſcadine for twelve hours, then ſtrain it into a ſhell, to which add a little Sap green: (but put no gum thereto.)

X. *For a Carnation.* Grind Ceruſe, well waſhed, with red Lead; or Ceruſe and Vermilion.

XI. *For Cloth of Gold.* Take brown Oker, and liquid Gold water, and heighten upon the ſame with ſmall ſtroaks of Gold.

XII. *For white Sattin.* Take firſt fine Ceruſe, which deepen with Cherryſtone black, then heighten again with Ceruſe, and fine touches where the light falleth.

XIII. *For a ruſſet Sattin.* Take Indy blew and Lake, firſt thin, and then deepned with Indy again.

XIV. *For a hair Colour.* It is made out of Maſticot, Umber, yellow Oker, Ceruſe, Oker de Rous, and Sea-coal.

XV. *For a Popinjay green.* Take a perfect green mingled with Maſticot.

XVI. *For changeable Silk.* Take water of Maſticot and red Lead; which deepen with Sap green.

XVII. *For a light Blew.* Take blew Bice, heightned with Ceruſe or Spodium.

XVIII. *For to ſhadow Ruſſet.* Take Cherryſtone black, and white; lay a light ruſſet, then ſhadow it with white.

XIX. *For a Skie colour.* Take blew Bice and Venice Ceruſe: but if you would have it dark, take ſome blew and white.

XX. *For a Straw colour.* Take Maſticot; then white heightened with Maſticot, and deepned with Pink. Or thus. Take red Lead deepned with Lake.

XXI. For Yellowiſh. Thin Pink deepned with pink and green: Orpiment burned makes a Marigold colour.

XXII. For a Peach colour. Take Brazil water, Log water and Ceruſe.

XXIII. For a light Purple. Mingle Ceruſe with Logwood water: or take Turnſole mingled with a little Lake, Smalt and Bice.

XXIV. For a Walnut colour. Red Lead thinly laid, and ſhadowed with Spaniſh brown.

XXV. For a Fire colour. Take Maſticot, and deepen it with Maſticot for the flame.

XXVI. For a Tree. Take Umber and white, wrought with Umber, deepned with black.

XXVII. For the Leaves. Take Sap green and green Bice, heighten it with Verditure and white.

XXVIII. For Water. Blew and white, deepned with blew, and heightned with white.

XXIX. For Banks. Thin Umber, deepned with Umber and black.

XXX. For Feathers. Take Lake frizled with red Lead.

CHAP. XXI.

Of Liquid Gold and Silver.

I. *Liquid Gold or Silver.*

Take five or ſix leaves of Gold or Silver, which grind

grind (with a ſtiff gum Lake water, and a good quantity of ſalt) as ſmall as you can; then put it into a vial or glazed veſſel; add ſo much fair water as may diſſolve the ſtiff gum water; then let it ſtand four hours, that the gold may ſettle: decant the water, and put in more, till the gold is clean waſhed: to the gold put more fair water, a little ſal Armoniack and common ſalt, digeſting it cloſe for four days; then put all into a piece of thin Glovers leather (whoſe grain is peeled off) and hang it up, ſo will the ſal Armoniack fret away, and the gold remain behind, which keep.

Or thus. *Grind fine leaf Gold with ſtrong or thick gum water very fine; and as you grind add more thick gum water; being very fine, waſh it in a great ſhell, as you do bice: then temper it with a little quanity of Mercury ſublimate, and a little diſſolved gum to bind it in the ſhell; ſhake it, and ſpread the Gold about the ſides thereof, that it may be all of one colour and fineneſs, which uſe with fair waters, as you do other Colours. The ſame obſerve in liquid Silver; with this obſervation, That if your Silver, by length of time, or humidity of the air becomes ruſty; then cover the place with juice of Garlick before you lay on the Silver, which will preſerve it.*

When you uſe it, temper it with glair of eggs, and ſo uſe it with pen or pencil. Glair of Eggs is thus made. Take the whites and beat them with a ſpoon, till that riſe all in a foam; then let them ſtand all night, and by morning they will be turned into clear water, which is good glair.

II. *Argentum Muſicum.*

Take one ounce of tin, melt it, and put thereto of Tartar and Quickſilver of each one ounce, ſtir them well together until they be cold, then beat it in a mortar and grind it on a ſtone; mix it with gum water, write therewith, and afterwards poliſh it.

III. *Burniſhed Gold or Silver.*

Take

Take gum-lake and diſſolve it into a ſtiff water; then grind a blade or two of Saffron therewith, and you ſhall have a fair gold: when you have ſet it, being throughly dry, burniſh it with a dogs tooth. Or thus, having writ with your pen or pencil what you pleaſe, cut the Leaf Gold or Silver into pieces, according to the draught, which take up with a feather and lay it upon the drawing, which preſs down with a piece of wool; and being dry, burniſh it.

IV. *Gold Armoniack.*

This is nothing but that which we have taught at the fourth Section of the ſixteenth Chapter of this Book.

V. *Size for burniſhed Gold.*

Take Bole Armoniack three drachms, fine Chalk one drachm; grind them as ſmall as you can together with fair water, three or four times, letting it dry after every time: then take glair and ſtrain it as ſhort as water, with which grind the Bole and Chalk, adding a little gum Hedera, and a few blades of Saffron: grind all as ſmall as poſſible, and put them into an Ox horn (I judge a glaſs veſſel better) and ſet it to rot in horſe dung for ſix weeks; then take it up, and let it have air, and keep it for uſe.

Its uſe is for gilding parchments, book covers, and leather, thus; lay this ſize firſt upon the parchment, then with a feather lay the Gold or Silver upon it, which when dry, burniſh it.

VI. *To diaper on Gold or Silver.*

You muſt diaper on Gold with Lake and yellow Oker: but upon Silver with Ceruſe.

VII. *Aurum Muſicum.*

Take fine Cryſtal, Orpiment, of each one ounce, beat each ſeverally into a fine powder, then grind them together well with glair.

You

You may write with it, with pen or pencil, and your letters or draught will be of a good gold colour.

CHAP. XXII.

Of Preparing the Colours.

I. COlours, according to their natures, have each a particular way of preparation: to wit, by grinding, washing or steeping.

II. The chief *Colours to be ground* are these; White Lead, Ceruse, Sinaper Lake, Oker, Pink, Indico, Umber, Colens Earth, Spanish Brown, Ivory Black, Cherrystone Black.

III. The chief *Colours to be wash'd* are Red Lead, Masticot, green Bice, Cedar green, Ultramarine, blew Bice, Smalt, Verditure.

IV. The chief *Colours to be steep'd*, are Sap-green, Saffron, Turnsole, Stone blew, Venice berries.

V. *To Grind Colours.*

Take the colour you would grind, and scrape off from it all the filth, then lay it upon the stone, and with the muller bruise it a little; then put thereto a little spring water, and grind all together very well, till the colour is very fine; which done, pour it out into certain hollows or furrows cut in chalk-stone, and there let it lie till it is dry, which reserve in papers or glasses.

VI. *To Wash colours.*

Put the colour into a glazed vessel, and put thereto fair water plentifully, wash it well, and decant (after a while) the water; do this six or seven times; at last put

put the water (being juſt troubled) into another glazed veſſel, leaving the dregs at bottom: then into this ſecond veſſel put more fair water, waſhing it as before, till the water (being ſettled) be clear, and the colour remain fine at bottom: we have taught another way at the twenty fourth Section of the eighteenth Chapter of this Book.

VII. *To ſteep Colours.*

Take a quantity thereof, and put it into a ſhell, and fill the ſhell with fair water, to which add ſome fine powder of Alom, to raiſe the Colour; let it thus ſteep a day and night, and you will have a good colour.

Where note; Saffron ſteeped in vinegar gives a good colour; and the Venice berries in fair water and a little Alom, or a drop or two of oyl of Vitriol makes a fair yellow.

VIII. *To temper the colours.*

Take a little of any colour, and put it into a clean ſhell, and add thereto a few drops of gum water, and with your fingers work it about the ſhell, then let it dry; when dry, touch it with your fingers, if any colour comes off, you muſt add ſtronger gum water: but being dry, if the colour gliſter or ſhine, it is a ſign there is too much gum in it, which you may remedy by putting in fair water.

IX. *To help the defects.*

Some colours as Lake, Umber, and others which are hard, will crack when they are dry; in this caſe, in tempering them add a little white Sugar candy in very fine powder, which mix with the colour and fair water in the ſhell, till the Sugar candy is diſſolved.

X. Theſe colours, Umber, Spaniſh brown, Colen earth, Cherryſtone, and Ivory black, are to be burnt before they be ground or waſh'd.

XI. *To burn or calcine Colours.*

This

This is done in a crucible, covering the mouth thereof with clay, and ſetting it in a hot fire, till you are ſure it is red hot through: which done, being cold, waſh or grind it as aforeſaid.

XII. *To prepare ſhadows for Colours.*

White is ſhaded with black, and contrariwiſe: yellow with Umber, and the Okers: Vermilion with Lake: blew Bice with Indie: Black coal with Roſet, &c.

CHAP. XXIII.

Of the Manual Inſtruments.

I. THe manual Inſtruments are four (by the ſecond Section of the fifteenth Chapter of this Book) to wit, The *Grinding ſtone* and *Muller*; *Pencils*; *Tables* to Limn on; and *ſhells* or little glaſſes or China diſhes.

II. The *Grinding ſtone* may be of Porphury, Serpentine or Marble, but rather a Pebble, for that is the beſt of all others: the Muller only of pebble, which keep very clean.

Theſe may be eaſily got of Marblers or Stone-cutters in London.

III. Chooſe your pencils thus: by their faſtneſs in the quills, and their ſharp points after you have drawn or wetted them in your mouth two or three times; ſo that although larger yet their points will come to as ſmall as a hair, which then are good; but if they ſpread or have any extravagant hairs they are naught.

To waſh your Pencils.

After

After uſing them, rub the ends of them well with ſoap, then lay them a while in warm water to ſteep, then take them out and waſh them well in other fair water.

V. *To prepare the Table.*

It muſt be made of pure fine paſte-board, ſuch as Cards are made of (of what thickneſs you pleaſe) very finely ſlick'd and glazed. Take a piece of this paſte-board of the bigneſs you intend the picture, and a piece of the fineſt and whiteſt parchment you can get (virgin parchment) which cut of equal bigneſs with the paſte-board; with thin, white, new made ſtarch, paſte the parchment to the paſte-board, with the outſide of the skin outwardmoſt: lay on the ſtarch very thin and eaven; then the grinding ſtone being clean, lay the card thereon with the parchment ſide downwards, and as hard as you can, rub the other ſide of the paſte-board with a Boars tooth ſet in a ſtick; then let it be thorow drie, and it will be fit to work or limn any curious thing upon.

VI. The ſhells holding or containing your colours, ought to be Horſe-muſcle ſhells, which may be got in July about Rivers ſides; but the next to theſe are ſmall muſcle ſhells, or in ſtead thereof little China or glaſs veſſels.

CHAP. XXIV.

Of Preparations for Limning.

I. HAve two ſmall glaſs or China diſhes, in either of which muſt be pure clean water, the one to waſh the pencils in being foul; the other to temper

per the colours with, when there is occaſion.

II. Beſides the pencils you Limn with; a large, clean, and dry pencil, to cleanſe the work from any kind of duſt, that may fall upon it, which one called Fitch-Pencils.

III. A ſharp Pen-knife to take off hairs that may come from your pencil, either among the colours or upon the work; or to take out ſpots that may fall upon the card or table.

IV. A Paper with a hole cut therein, to lay over the Card, to keep it from duſt and filth, to reſt your hand upon, and to keep the ſoil and ſweat of your hand from ſullying the parchment, as alſo to try your pencils on before you uſe them.

Let the ſmall glaſſes, waters, pencils and pen-knife lie all on the right hand.

V. Have ready a quantity of light carnation or fleſh colour temper'd up in a ſhell by it ſelf with a weak gum water; If it be a fair complexion, mix white and red Lead together; if a brown or ſwarthy, add to the former, Maſticot, or Engliſh Oker, or both: but be ſure the fleſh colour be always lighter than the complexion you would limn; for by working on it you may bring it to its true colour.

VI. In a large Horſe-muſcle ſhell place your ſeveral ſhadows (for the fleſh colour) in little places one diſtinct from another.

VII. In all ſhadowings have ready ſome white, and lay a good quantity of it by it ſelf, beſides what the ſhadows are firſt mixed with: for red for the cheeks and lips, temper Lake and red Lead together: for blew ſhadows (as under the eyes and in veins) Indico or Ultrarine and white: for gray faint ſhadows, white, Engliſh Oker, ſometimes Maſticot: for deep ſhadows, white, Engliſh Oker, Umber: for dark ſhadows, Lake and Pink, which make a good fleſhy ſhadow. VIII. To

VIII. To make choice of the light.

Let it be fair and large and free from ſhadows of trees or houſes, but all clear Skie light, and let it be direct from above, and not tranſverſe; let it be northerly and not ſoutherly; and let the room be cloſe and clean, and free from the Sun-beams.

IX. Of the manner of ſitting.

Let your desk on which you work be ſo ſituate, that ſitting before it, your left arm may be towards the light, that the light may ſtrike ſidling upon your work: Let the party that is to be Limned, be in what poſture themſelves will deſign, but not above two yards off you at moſt, and level with you; wherein obſerve their motion, if never ſo ſmall, for the leaſt motion, if not recalled, may in ſhort time bring on you many errors: Laſtly, the face being finiſhed, let the party ſtand (not ſit) at a farther diſtance (four or five yards off) to draw the poſture of his clothes.

CHAP. XXV.

Of the Practice of Limning in Miniture, or Drawing of a Face in Colours.

I. *To begin the work.*

Have all things in a readineſs (as before) then on the Card lay the prepared colour (anſwerable to the complexion preſented) eaven and thin, free from hairs and ſpots, over the place where the picture is to be: the ground thus laid, begin the work, the party being ſet, which muſt be done at three ſittings: at the firſt ſitting the face is only dead coloured, which takes up about two hours time: at the ſecond ſitting, go over the work more curiouſly, adding its particular

graces or deformities, ſweetly couching the colours, which will take up about five hours time: at the third ſitting finiſh the face, in which you muſt perfect all that is imperfect and rough, putting the deep ſhadows in the face, as in the eyes, eye-brows, and ears, which are the laſt of the work, and not to be done till the hair curtain, or backſide of the picture, and the drapery be wholly finiſhed.

II. *The operation or work at firſt ſitting.*

The ground for the complexion being laid, draw the out-lines of the face, which do with Lake and white mingled; draw faintly, that if you miſs in proportion or colour you may alter it: this done, add to the former colour red Lead, for the cheeks and lips; let it be but faint (for you cannot lighten a deep colour) and make the ſhadows in their due places, as in the cheeks, lips, tip of the chin and ears, the eyes and roots of the hair: ſhadow not with a flat pencil, but by ſmall touches (as in hatching) and ſo go over the face. In this dead covering rather than to be curious, ſtrive as near as may be to imitate nature. The red ſhadows being put in their due places; ſhadow with a faint blew, about the corners and balls of the eyes; and with a grayiſh blew under the eyes and about the temples, heightning the ſhadows as the light falls, as alſo the harder ſhadows in the dark ſide of the face, under the eye-brows, chin and neck. Bring all the work to an equality, but add perfection to no particular part at this time; but imitate the life in likeneſs, roundneſs, boldneſs, poſture, colour, and the like. Laſtly, touch at the hair with a ſutable colour in ſuch curls, folds and form, as may either agree with the life, or grace the picture; fill the empty places with colour, and deepen it more ſtrongly, than in the deepeſt ſhadowed before.

III. *The*

III. *The operation or work at ſecond ſitting.*

As before rudely, ſo now you muſt ſweeten thoſe varieties which Nature affords, with the ſame colours and in the ſame places, driving them one into another, yet ſo as that no lump or ſpot of colour, or rough edge may appear in the whole work; and this muſt be done with a pencil ſharper than that which was uſed before. This done, go to the backſide of the picture, which may be Landskip, or a curtain of blew or red Sattin: if of blew, temper as much Bice as will cover a Card, and let it be well mixed with gum; with a pencil draw the out-line of the Curtain; as alſo of the whole picture; then with a large pencil lay thinly or airily over the whole ground, on which you mean to lay the blew; and then with a large pencil, lay over the ſame a ſubſtantial body of colour; in doing of which, be nimble, keeping the colour moiſt, letting no part thereof be drie till the whole be covered. If the Curtain be crimſon, trace it out with lake; lay the ground with a thin colour; and lay the light with a thin and wateriſh colour, where they fall; and while the ground is yet wet, with a ſtrong dark colour tempered ſomething thick, lay the ſtrong and hard ſhadows cloſe by the other lights. Then lay the linnen with faint white, and the drapery flat, of the colour you intend it. In the face, ſee what ſhadows are too light or too deep, for the Curtain behind, and drapery, and reduce each to their due perfection; draw the lines of the eye-lids, and ſhadow the entrance into the ear, deepneſs of the eye-brows, and eminent marks in the face, with a very ſharp pencil: laſtly, go over the hair, colouring it as it appears in the life, caſting over the ground ſome looſe hairs, which will make the picture ſtand as it were at a diſtance from the curtain: *Shadow the linnen with white, black,*

and a little yellow and blew; and deepen your black with Ivory black, mixed with a little Lake and Indico.

IV. *The operation or work at third ſitting.*

This third work is wholly ſpent in giving ſtrong touches where you ſee cauſe; in rounding, ſmoothing and colouring the face, which you may better ſee to do, now the curtain and drapery is limned than before. And now obſerve whatſoever may conduce to the perfection of your work, as geſture, skars or moles, caſts of the eyes, windings of the mouth, and the like.

CHAP. XXVI.

Of Limning Drapery.

I. A Full and ſubſtantial ground being laid all over where you intend the drapery; as if blew, with Bice ſmoothly laid, deepen it with Lake and Indico; lightning it with a fine faint white, in the extreme light places, the which underſtand of other colours.

II. If the body you draw be in *Armour*, lay liquid ſilver all over for a ground, well dried and burniſhed; ſhadow it with Silver, Indico and Umber, according as the life directs you.

III. For *Gold Armour*, lay liquid gold as you did the ſilver, and ſhadow upon it with Lake, Engliſh Oker, and a little gold.

IV. For *Pearls*, your ground muſt be Indico and white; the ſhadows black and pink.

V. For *Diamonds*, lay a ground of liquid ſilver, and

and deepen it with Cherryſtone black and Ivory black.

VI. For *Rubies*, lay a ſilver ground, which burniſh to the bigneſs of a Rubie: then with pure Turpentine temper'd with Indian Lake, from a ſmall wire heated in a Candle, drop upon the burniſhed place, faſhioning it as you pleaſe with your Inſtruments, which let lie a day or two to dry.

VII. For *Emeraulds*, or any green ſtone, temper Turpentine with Verdigrieſe, and a little Turmerick root, firſt ſcraped, with Vinegar, drying it, grind it to fine powder and mix it.

VIII. For *Saphyres*, mix or temper Ultramarine with pure Turpentine, which lay upon a ground of liquid Silver poliſht.

To make liquid Gold or Siver, ſee the firſt Section of the twenty firſt Chapter of this Book.

CHAP. XXVII.

Of Limning Landskip.

ALL the variable expreſſions of Landskip are innumerable, they being as many as there are men and fancies; the general rules follow.

I. Always begin with the Sky, Sunbeams, or lighteſt parts firſt; next the yellowiſh beams (which make of Maſticot and white) next the blewneſs of the Skie, (which make of Smalt only.)

II. At firſt colouring, leave no part of the ground uncovered, but lay the colours ſmooth all over.

III. Work the *Sky* downwards: towards the Horizon fainter and fainter, as it draws nearer and nearer

the earth: the tops of mountains far remote, work ſo faint that they may appear as loſt in the air.

IV. Let places low, and near the ground be of the colour of the earth, of a dark yellowiſh, or brown green; the next lighter green; and ſo ſucceſſively as they loſe in diſtance, let them abate in colour.

V. Make nothing which you ſee at a diſtance perfect, by expreſſing any particular ſign which it hath, but expreſs it in colours, as weakly and faintly as the eye judgeth of it.

VI. Always place light againſt darkneſs and darkneſs againſt light, by which means you may extend the proſpect as a very far off.

VII. Let all ſhadows loſe their force as they remove from the eye; always letting the ſtrongeſt ſhadow be neareſt hand.

VIII. Laſtly, Take Iſinglaſs in ſmall pieces half an ounce, fair Conduit water two quarts, boil it till the glaſs is diſſolved, which ſave for uſe: with which mix ſpirit or oyl of Cloves, Roſes, Cinnamon or Ambergrieſe, and lay it on and about the Picture where it is not coloured (leſt it ſhould change the Colours: but upon the Colours uſe it without the perfumes) ſo it will varniſh your Pictures, and give them a gloſs, retaining the glory of their colours, and take from them any ill ſcent which they might otherwiſe retain.

Horat. Epod. 16.

Vos, quibus eſt virtus, muliebrem tollite luctum,
Etruſca præter & volate littora.
Nos manet Oceanus circumvagus; arva, beata
Petamus arva, divites & inſulas:
Reddit ubi Cererem tellus inarata quotannis,
Et imputata floret uſquè vinea.

Germinet

Germinet & nunquam fallentis termes olivæ,
Suámque pulla ficus ornat arborem.
Illis injussæ veniunt ad mulctra capellæ:
Refértque tenta grex amicus ubera.
Nec Vespertinus circumgemit ursus ovile,
Nec intumescit alta viperis humus:
Pluráque felices mirabimur: ut neque largis
Aquosus Eurus arva radat imbribus,
Pinguia nec siccis urantur semina glebis:
Utrumque rege temperante Cœlitum.
Non huc Argoo contendit remige pinus,
Neque impudica Colchis intulit pedem:
Non huc Sidonii torserunt cornua nautæ,
Laborioſa nec cohors Ulyssei.
Nulla nocent pecori contagia, nullius astri
Gregem æstuosa torret impotentia.
Jupiter illa piæ secrevit littora genti,
Ut inquinavit ære tempus aureum.

You nobler spirits, hence with womens tears,
Sail from Etruscan confines free from fears.
The Earth encircling Ocean us invites,
Rich Islands, Fields, Fields blest with all delights.
Where Lands untill'd are yearly fruitful seen,
And the unpruned vine perpetual green.
Still, Olives by the faithful branch are born,
And mellow Figgs their native trees adorn.
There milchy goats come freely to the pail,
Nor do glad flocks with dugs distended fail.
The mighty Bear roars not about the fold,
Nor hollow earth doth poysonous Vipers hold.
Add to this happiness, the humid East
Doth not with frequent showers the fields infest.
Nor the fat seeds are parcht in barren land,
The powers above both temp'ring with command.

No Bark came hither with Argoan *oar,*
Nor landed wanton Colchis *on this ſhoar:*
Cadmus *with filled ſails turn'd not this way,*
Nor painful troops that with Ulyſſes *ſtray.*
Here amongſt cattel no Contagions are,
Nor feel flocks droughty power of any ſtar.
When braſs did on the golden Age intrude,
Jove *for the pious did this place ſeclude.*

Libri Polygraphices ſecundi

FINIS.

POLYGRAPHICES

LIBER TERTIUS.

Of Painting, Waſhing, Colouring, Dying, Varniſhing and Gilding.

Containing the deſcription and uſe of all the chief Inſtruments and Materials; the way and manner of working, together with the beginning, progreſs and end thereof.

Exemplified in the Painting of the Antients: the waſhing of Maps, Globes or Pictures: Dying of Cloath, Silks, Horns, Bones, Woods, Glaſs, Stones and Metals: Together with the Gilding and Varniſhing thereof, according to any purpoſe or intent.

CHAP. I.

Of Painting in Oyl, and the Materials thereof.

I. PAinting in Oyl is nothing but the work or Art of Limning performed with colours made up or mixed with oyl.

II. The Materials of Painting are chiefly ſeven, 1. *The Eaſel*, 2. *The Pallet*, 3. *The Straining frame*, 4. *The Primed cloath*, 5. *Pencils*, 6. *The Stay*, 7. *Colours*.

III. *The Eaſel* is a Frame made of wood (much like a ladder)

ladder) with ſides flat, and full of holes, to put in two pins to ſet your work upon higher or lower at pleaſure; ſomething broader at bottom than at the top; on the backſide whereof is a ſtay, by which you may ſet the Eaſel more upright or ſloping.

IV. The *Pallet* is a thin piece of wood, (Peartree or Walnut) a foot long, and about ten inches broad, almoſt like an Egg, at the narroweſt end of which is made an hole, to put in the thumb of the left hand, near to which is cut a notch, that ſo you may hold the pallet in your hand. *Its uſe is to hold and temper the Colours upon.*

V. The *Streining frame* is made of wood, to which with nails is faſtned the primed cloath, which is to be painted upon.

Theſe ought to be of ſeveral ſizes according to the bigneſs of the cloath.

VI. The *Primed cloath* is that which is to be painted upon; and is thus prepared.

Take good Canuaſe and ſmooth it over with a ſlick-ſtone, ſize it over with ſize, and a little honey, and let it dry; then white it over once with whiting and ſize mixed with a little honey, ſo is the cloath prepared, on which you may draw the picture with a coal, and laſtly lay on the Colours.

Where note, honey keeps it from cracking, peeling or breaking out.

VII. *Pencils* are of all bigneſſes, from a pin to the bigneſs of a finger, called by ſeveral names, as *Ducks quill fitched* and *pointed*; *Gooſe quill fitched* and *pointed*; *Swans quill fitched* and *pointed*; *Jewelling pencils*, and *briſtle pencils*: ſome in quills, ſome in tinn caſes, and ſome in ſticks.

VIII. The *Stay* or *Mol-ſtick*, is a Brazil ſtick (or the like) of a yard long; having at the one end thereof, a little ball of Cotton, fixed hard in a piece of leather,

ther, of the bigneſs of a cheſtnut; which when you are at work you muſt hold in your left hand; and laying the end which hath the leather ball upon the cloath or frame, you may reſt your right arm upon it, whilſt you are at work.

IX. The Colours are in number ſeven (*ut ſuprà*) to wit, White, Black, Red, Green, Yellow, Blew, and Brown.

Of which ſome may be tempered on the pallet at firſt; ſome muſt be ground, and then tempered; and other ſome muſt be burnt, ground, and laſtly tempered.

X. To make the ſize for the primed cloath at the fifth Section of this Chapter.

Take glew, and boil it well in fair water, till it be diſſolved, and it is done.

XI. To make the whiting for the fifth Section of this Chapter.

Take of the aforeſaid ſize, mix it with whiting ground, and ſo white your boards or cloath (being made ſmooth) dry them, and white them a ſecond or third time; laſtly, ſcrape them ſmooth and draw it over with white Lead tempered with oyl.

XII. To keep the Colours from skinning.

Oyl colours (if not preſently uſed) will have a skin grow over them, to prevent which, put them into a glaſs, and put the glaſs three or four inches under water, ſo will they neither skin nor dry.

XIII. To cleanſe the Grinding ſtone and Pencils.

If the grinding ſtone be foul, grind Curriers ſhavings upon it, and then crumbs of bread, ſo will the filth come off: if the pencils be foul, dip the end of them in oyl of Turpentine, and ſqueeze them between your fingers, and they will be very clean.

CHAP.

CHAP. II.

Of the Colours in General, and their ſignifications.

I. THe chief *Whites* for painting in oyl are, white Lead, Ceruſe and *S*podium.

II. The chief *Blacks* are, Lamp black, *S*eacoal black, Ivory black, Charcoal, and earth of Colen.

III. The chief *Reds* are, Vermilion, *S*inaper lake, red Lead, Indian Red, Ornotto.

IV. The chief *Greens* are, Verdigrieſe, Terra vert, Verditer.

V. The chief *Yellows* are, Pink, Maſticot, Engliſh Oker, Spruſe Oker, Orpiment.

VI. The chief *Blews* are, blew Bice, Indico, Ultramarine, *S*malt.

VII. The chief *Browns* are, Spaniſh brown, burnt *S*pruce, Umber.

VIII. Theſe Colours, Lamp black, Verditer, Vermilion, Bice, *S*malt, Maſticot, Orpiment, Ultramarine, are not to be ground at all, but only tempered with oyl upon the Pallet.

IX. Theſe colours, Ivory, Ceruſe, Oker and Umber are to be burnt, and then ground with oyl.

X. All the reſt are to be ground upon the Grinding ſtone with Linſeed oyl (except white Lead, when it is to be uſed for Linnen, which then is to be ground with oyl of Walnuts, for Linſeed oyl will make it turn yellow.)

And now ſince we are engaged to treat of colours, it may neither be unneceſſary, nor unuſeful for the young Artiſt to know their natural ſignifications; which take as followeth.

XI. *Blew* ſignifieth truth, faith, and continued affections;

Azure

Azure, Conſtancy; *Violet*, a religious mind.

XII. *Orange tawny*, ſignifies Pride, alſo integrity; *Tawny*, forſaken; *Limmon*, jealouſie.

XIII. *Green* ſignifies hope: *graſs-green*, youth, youthfulneſs, and rejoicing: *Sea green*, Inconſtancy.

XIV. *Red* ſignifies Juſtice, Vertue and Defence: *Flame-colour*, Beauty and deſire: *Maidens-bluſh*, envy.

XV. *Yellow* ſignifies Jealouſie: perfect yellow, Joy, Honour, and greatneſs of Spirit: *Gold-colour*, Avarice,

XVI. *Fleſh-colour* ſignifieth laſciviouſneſs: *Carnation*, Craft, Subtilty and Deceipt: *Purple*, Fortitude and Strength.

XVII. *Willow*-colour ſignifieth forſaken: *Popingjay-green*, Wantoneſs: *Peach*-colour, Love.

XVIII. *White* ſignifieth Death: *Milk-white*, Innocency, Purity, Truth, Integrity: *Black*, Wiſdom, Sobriety, and Mourning.

XIX. *Straw*-colour ſignifieth plenty: *Ruſt of Iron*, Witheredneſs: *Ermine*, Religion and Holineſs.

XX. *The White, Black, Red and green, are colours held ſacred in the Church of* Rome: *White* is worn in the feſtivals of Virgins, Saints, Confeſſors and Angels, to ſhew their Innocency: *Red* in the ſolemnities of the Apoſtles and Martyrs of Jeſus: *Black* in Lent and other faſting days: *Green* is worn between the *Epiphany* and *Septuageſima*: and between *Pentecoſt* and *Advent*.

CHAP.

CHAP. III.

Of the fitting of Colours for Painting.

I. UPon the Pallet diſpoſe the ſeveral colours, at a convenient diſtance, that they may not intermix; firſt lay on the Vermilion, then the Lake, then the burnt Oker, then the India Red, Pink, Umber, Black and Smalt, each in their order, and lay the white next to your thumb, becauſe it is ſoftneſt uſed, for with it all ſhadows are to be lightned; and next the white a ſtiff ſort of Lake; thus is the Pallet furniſhed with ſingle colours for a face.

Now to temper them for ſhadowing various complexions do thus.

II. For a fair complexion.

Take White one Drachm; Vermilion, Lake of each two Drachms; temper them, and lay them aſide for the deepeſt Carnation of the face: to part of the aforeſaid mixture put a little more white, for a light carnation: and to part of that put more white (which temper on the Pallet) for the lighteſt colour of the face.

III. The faint ſhadows for the fair complexion.

Take Smalt, and a little White, for the eyes: to part of that add a little pink, and temper by it ſelf for faint greeniſh ſhadows in the face.

IV. The deep ſhadows for the ſame.

Take Sinaper Lake, Pink, and black of each, which temper together; if the ſhadows ought to be redder than what is tempered, add more Lake: if yellower, add more pink: if blewer or grayer, add more black; thus ſhall the Pallet be fitted with colours.

V. For a brown or ſwarthy complexion.

The ſingle colour being laid on the Pallet as before, and tempered;

tempered; to the White, Lake, and Vermilion, put a little burnt Oker for a Tawney: and for heightning adde ſome Yellow Oker, ſo much as may juſt change the colours. The faint and deep ſhadows are the ſame at the third and fourth Section of this Chapter.

VI. For a tawny Complexion.

The colours are the ſame with the former, but the ſhadows are different; which muſt be made of burnt Oker and Umber, (which will fit well:) if the ſhadow be not yellow enough, add a little pink to it.

VII. For a black Complexion.

The dark ſhadows are the ſame with the former: but for heightening take White, Black, Lake and burnt Oker; in tempering of which put in the white by degrees, till you come to the lighteſt of all. Where note, that the ſingle colours at firſt laid upon the Pallet and tempered, ſerve for ſhadows for all complexions; and that all deepnings ought to be with black, Lake and pink tempered together.

CHAP. IV.

Of Colours for Velvet.

I. *FOR black Velvet.* Take Lamp black and Verdigrieſe for the firſt ground; that being drie, take Ivory black, and Verdigrieſe; ſhadow it with white Lead mixed with Lamp black.

II. *For Green.* Take Lamp black and white Lead, and work it like a ruſſet Velvet, and let it drie; then draw it over with Verdigrieſe tempered with a little pink.

III. *For Sea Green.* Take only Verdigrieſe and lay it over Ruſſet: If a *Graſs-green*, put a little Maſticot to it: ſhadow theſe greens with Ruſſet; which lay according

cording to the deepneſs of the green.

IV. *For Red.* Take Vermilion, and ſhadow it with Spaniſh brown: and where you would have it darkeſt, ſhadow with Seacoal black and Spaniſh brown with the aforeſaid colours; drie it, and then gloſs it over with Lake.

V. *For Crimſon or Carnation.* Take Vermilion, to which add white Lead at pleaſure.

VI. *For Blew.* Take Smalt tempered alone.

VII. *For Yellow.* Take Maſticot and yellow Oker; and where you would have it darkeſt, ſhadow it with Umber.

VIII. *For Tawney.* Take Spaniſh brown, white Lead, and Lamp Black, with a little Verdigrieſe, to ſhadow where need is: when drie, gloſs it over with Lake and a little red Lead.

IX. *For hair colour.* Take Umber ground alone; and where it ſhould be brighteſt, mix ſome white Lead about the folds, lighten or darken with white Lead and Umber.

X. *For Aſh colour.* Take Charcoal, black and white Lead: lighten with white Lead: *a colour like to a dark ruſſet will be an Aſh colour.*

XI. *For purple.* Take Smalt and Lake, of each alike, temper them (light or deep as you pleaſe) with white Lead.

XII. *Laſtly note*, that in painting Velvet you muſt at firſt work it ſomewhat ſad, and then give it a ſudden brightneſs.

CHAP.

CHAP. V.

Of colours for Sattins.

I. FOR *Black.* Take Lamp-black ground with oyl and tempered with white Lead; and where you would have it ſhine moſt, mix Lake with the white Lead.

II. *For Green.* Take Verdigrieſe ground alone and mixed with white Lead; adding Pink where you would have it brighteſt: to the deepeſt ſhadows add more Verdigrieſe.

III. *For Yellow.* Take Maſticot, yellow Oker and Umber (ground each by themſelves) where it ſhould be brighteſt, uſe Maſticot alone; where a light ſhadow, uſe Oker; where darkeſt, uſe Umber.

IV. *For Purple.* Take Smalt alone, and where it ſhould be brighteſt, uſe white Lead.

V. *For Red.* Take Spaniſh brown (ground alone) mix it with Vermilion, and where it ſhould be brighteſt, mix white Lead with the Vermilion.

VI. *For White.* Take white Lead (ground alone) and Ivory black, which temper light or dark.

VII. *For Blew.* Temper Smalt and white Lead; where it ſhould be ſaddeſt, uſe Smalt; where lighteſt, white Lead.

VIII. *For Orange colour.* Take red Lead and Lake; where brighteſt, red Lead; where ſaddeſt, Lake.

IX. *For Hair colour.* Temper Umber and white Lead; where it ſhould be brighteſt, put more white Lead; and where the greateſt ſhadow, uſe ſeacoal Black mixed with Umber.

CHAP. VI.

Of Colours for Taffatie, Cloth and Leather.

Taffaties are painted much as *Sattins*, thus: Take ſuch colours as are fit for the purpoſe, and lay them one by another upon the work, and ſhadow them with others.

II. *Cloth* is the ſame work with *Sattin*, ſave, you muſt not give to cloth ſo ſudden a ſhining gloſs.

III. *Cloth of Gold* is made of brown Oker and liquid Gold; water and heighten upon the ſame with ſmall gold ſtroaks.

IV. *For Buff*, mix yellow Oker and White lead; and where it ſhould be dark by degrees, mix it with a little Umber; when you have done, ſize it over with Umber and ſeacoal Black.

V. *For yellow Leather*, take Maſticot and yellow Oker: ſhadow it with Umber.

VI. *For black Leather*, take Lamp black, and ſhadow it with white Lead.

VII. *For white Leather*, take white Lead, and ſhadow it with Ivory black.

CHAP. VII.

Of Colours for Garments in general.

I. FOR *Black*. Let the dead colour be Lamp black and Verdigrieſe: being dry, go over with Ivory black and Verdigrieſe: but before the ſecond going over, heighten it with white.

II. *For*

II. *For Hair colour.* Take Umber and White for the ground; Umber and black for the deeper ſhadows; Umber and Engliſh Oker for the meaner ſhadows; white and Engliſh Oker for heightning.

III. *For Blew.* Take Indico and White: firſt lay the White, then the Indico and White mixed; then deepen it with Indico; and when drie, glaze it with Ultramarine which will never fade.

Smalt will turn black, and Bice will turn green.

IV. *For Purple.* Take Smalt tempered with Lake and white Lead; then heighten with white Lead.

V. *For a ſad Red.* Take Indian Red heightned with White.

VI. *For a light Red.* Take Vermilion; glaze it over with Lake, and heighten it with White.

VII. *For a Scarlet.* Take Vermilion, and deepen it with Lake or Indian red.

VIII. *For Green.* Take Bice and Pink, heighten it with Maſticot, and deepen with Indico and Pink.

IX. *For Yellow.* Take Maſticot, yellow Oker, Umber; lay Maſticot and White in the lighteſt places; Oker and White in the mean places; and Umber in the darkeſt; glaze it with Pink.

X. *For Orange colour.* Lay the lighteſt parts with red Lead and White, the mean parts with red Lead alone; the deeper parts with Lake; and if need is, heighten it with white.

XI. *For a ſad Green.* Mix Indico with Pink: *for a light Green* mix Pink and Maſticot: *for a Graſs green* mix Verdigrieſe and Pink.

XII. Remember always to lay yellows, blews, reds and greens, upon a white ground, for that only giveth them life.

CHAP. VIII.

Colours for Metals and precious ſtones.

I. FOR *Iron.* Take Lamp black and white Lead; if you would have it ruſty, take ſeacoal black, and mix it with a little white.

II. *For Silver.* Take Charcoal black and white Lead: where you would have it darkeſt, uſe more Charcoal; work ſilver ſomewhat ruſtiſh, and give it a ſudden gloſs with white Lead only.

III. *For Gold.* Take Lake, Umber, red Lead, Maſticot: lay the ground with red Lead, and a little dry Pink: where you would have it darkeſt, ſhadow it moſt with Umber; where lighteſt with Maſticot.

Note, in grinding the red Lead for the gold ſize, put in a little Verdigrieſe to make it dry ſooner.

IV. *For Pearls.* Temper Charcoal black with white Lead, till it be a perfect ruſſet; then make the Pearl with it, and give it a ſpeck of white Lead only to make it ſhine.

Where note, that Ceruſe tempered with oyl of white Poppy is excellent to beighten up Pearls.

V. *For precious ſtones.* For Rubies, &c. lay their counterfeit grounds with tranſparent colours; and Lake, Vedigrieſe and Verditer give them a ſhining colour.

CHAP.

CHAP. IX.

Of Colours for Landskip.

I. FOR *a light Green*, uſe pink and Maſticot heightned with white: for a ſad green, Indico and Pink heightned with maſticot.

II. *For ſome Trees*, take Lake, Umber and white: *for others* charcoal and white: *for others* Umber, black and white, with ſome green: adding ſometimes Lake or Vermilion, with other colours.

III. *For wood*, take lake, umber and white, mixing ſometimes a little green withal.

IV. *For Fire*, lay red Lead and Vermilion tempered together where it is reddeſt: where it is blew, lay oyl, ſmalt, and white lead: where it is yellow, take maſticot, and work it over in certain places: where you would have it ſhine moſt, with Vermilion.

V. *For an Azure skie*, which ſeems afar off, take oyl, ſmalt, or bice, and temper them with Linſeed oyl. *But grind them not: for ſmalt or bice utterly loſe their colour in grinding.*

VI. *For a red skie*, take Lake and White; and for Sun beams, or yellow clouds at Sun-riſing or ſetting, take maſticot and white.

VII. *For a Night skie*, or clouds in a ſtorm, take Indico deepned with black, and heightned with white.

VIII. *For wood colours.* They are compounded either of Umber and white; Char-coal and white, Sea-coal and white; Umber black and white; or with ſome green added; to which you may adjoin ſometimes, as in barks of trees, a little Lake or Vermilion.

IX. *Laſtly, for the practical performing of the work*, have recourſe to the rules delivered in *chap.* 13. *lib* 1. and *chap.* 27. *lib.* 2.

CHAP. X.

Of the Painting of the Face.

I. HAve your neceſſary pencils in readineſs, as two pencils ducks quill fitched; and two ducks quill pointed; two gooſe quill fitched; and two pointed: two briſtles both alike: one Swans quill fitched, and one pointed: one larger pencil in a tin caſe fitched; and a briſtle of the ſame bigneſs; every one having a ſtick of about nine inches long put into the quill thereof, the farther end of which ſtick muſt be cut to a point.

II. The *pencils* in a readineſs in your left hand, with the *paliet* upon your thumb, prepared with fit *colours*, and your *molſtick* to reſt upon; you muſt work according to the directions following.

III. The cloth being pinned, and ſtrained upon the frame, take a knife, and with the edge thereof ſcrape over the cloath, leſt knots or the like ſhould trouble it.

IV. Then ſet the *frame* and *cloth* upon the *Eaſel*, at a convenient heighth, that ſitting on a ſtool (even with the party you draw) you may have the face of the picture equal, or ſomething higher than your own: ſet the Eaſel to the light (as in Limning we have taught) letting it come in upon your left hand, caſting the light towards the right.

V. Let the perſon to be drawn, ſit before you in the poſture he intends to be painted in, about two yards diſtant from you.

VI. Then with a piece of painted chalk draw the proportion of the face upon the cloth, with the place of the eyes, noſe, mouth, ears, hair, and other poſtures.

Here is no difficulty in this, if you miſs much, the

colours

colours will bring all to rights again.

VII. Then take a pencil Swans quill pointed, and begin to paint ſome of the lighteſt parts of the face with the lighteſt colour, (as the heightning of the forehead, noſe, cheek-bone, of the lighteſt ſide:) the mean parts next (as the cheek-bone of the dark ſide, chin, and over the upper lip:) proceeding gradually till you come to the reddeſt parts of all.

VIII. Lay faint greeniſh ſhadows in convenient places; and where it is neceſſary to ſoften harſher ſhadows; but take heed of putting green where red ſhould be.

IX. The faint or light parts thus done, take one of the Gooſe quill pointed, or Ducks quill fitched, and begin at the eyes to ſhadow with Lake, going over the noſe, mouth, compaſs of the ear, &c. before you lay on any colour, wiping it lightly over with a linnen rag, to prevent the overcoming of the other colours.

X. The colours both light and dark being put in, take a great fitch pencil, and ſweeten the colours therewith; by going over the ſhadows with a clean ſoft pencil, which being well handled will drive and intermix the colours one into another, that they will look as if they were all laid on at once, and not at divers times.

Where note that the bigger pencils you uſe, the ſweeter and better your work will lie.

XI. *At the ſecond ſitting*, begin again with clean pencils, of ſuch bigneſs as the work requires, and obſerve well the perſon, and ſee what defects you find in your work at firſt ſitting, and amend them; then heighten or deepen the ſhadows as occaſion requires.

XII. *Laſtly*, take a Gooſe quill briſtle, and put in the hair about the face (if there muſt be any) and rub in the greater hair, with the greater briſtle; heightning it up with the Gooſe quill pencil.

CHAP. XI.

Of the cleanſing of any old Painting.

I. TAke good Wood aſhes, and ſcarce them; or elſe ſome Smalt or powder blew, and with a Spunge and fair water gently waſh the picture you would cleanſe (taking great care of the ſhadows) which done, dry it very well with a clean cloth.

II. Then varniſh it over again with ſome good varniſh, but ſuch as may be waſhed off again with water if need be.

We ſhall hereafter ſhew the way of making varniſh of ſeveral ſorts; mean ſeaſon this following may ſerve.

III. Take either common varniſh (made with Gumſandrack diſſolved in Linſeed oyl by boiling) or Glair of Eggs, and with your pencil go over the picture once, twice, or more therewith as need requires.

CHAP. XII.

The painting of the Antients exemplified firſt in ſome of their Heathen gods.

I. *Jupiter*, (their chief god) paint with long black curled hair, in a purple robe, trimmed with gold, and ſitting on a golden throne, with bright yellow clouds diſperſed about him.

II. *Apollo* or *Sol* (the god of Phyſick) with long, curled, yellow hair, crowned with a Laurel, in a purple robe, a ſilver bow, golden hair, and the throne of Emeralds.

III. *Mercury*, with long, yellow, curled hair, in a coat

coat of flame colour, with a mantle purely white, trimmed with gold and ſilver; his beaver white with white feathers, his ſhoes golden, his rod ſilver.

IV. *Neptune*, with long, hoary hair, in a blew or ſea green mantle, trimmed with ſilver, riding in a blew chariot, or on a Dolphin, of a brown black colour, with a ſilver trident in his right hand.

V. *Pluto*, with long, curled, black hair, in a robe of cloth of gold.

VI. *Bacchus*, with ſhort, brown, curled hair, with a Leopards skin ſpotted, or in a green mantle; a tawny face, with a wreath of Vine branches.

VII. *Hymen*, with long yellow hair, in a purple or ſaffron coloured mantle.

VIII. *Vulcan*, paint in a ſcarlet robe.

IX. *Triton* (*Neptune*'s Trumpeter) with a blew skin, and in a purple mantle.

X. *Cupid* was painted by *Zeuxis* (*that famous Painter of Greece*) in a green robe.

XI. *Minos* (*one of the Judges of Hell*) with hair long, brown, and curled; crowned with a golden crown; his robe blew and ſilver, his buskins of gold.

XII. *Momus* (*the carping god*) with a darkiſh robe, his beard and hair party-coloured.

CHAP.

CHAP. XIII.

Of the painting of ſome of the Heathen goddeſſes.

I. *Juno, Queen of the goddeſſes*, with black hair and eyes, adorned with a sky-coloured mantle, or pied; wrought with gold and peacocks eyes; like the orient circles in the peacocks trains.

II. *Diana, the goddeſs of chaſtity*, with yellow hair; a graſs green mantle, trimmed with ſilver; buskins ſilver; bow golden; quiver painted colours.

III. *Pallas, the goddeſs of wiſdom*, with a blew mantle imbroidered with ſilver.

IV. *Venus, the goddeſs of love and beauty*, with gold yellow hair, attired with black; a ſcarlet (or elſe dun-coloured) robe.

V. *Ceres, the goddeſs of Corn and plenty*, with yellow hair, and a ſtraw-coloured mantle trimmed with ſilver.

VI. *Tellus, the goddeſs of the earth*, in a green mantle.

VII. *Urania*, in a mantle of azure, filled with Lamps.

VIII. *Aurora*, in a purple robe, in a blew mantle fringed with ſilver.

IX. *Proſerpine, Queen of Hell*, in a black mantle trimmed with gold flames.

X. *Veſta, the daughter of Saturn*, in white garments filled with flames.

XI. *Aſtrea, the goddeſs of juſtice*, in a crimſon mantle, trimmed with ſilver.

XII. *Flora*,

XII. *Flora, the goddess of flowers,* in a mantle of divers colours.

XIII. *Night,* in a black mantle spotted with stars of gold.

XIV. The *Graces* were always alike in silver robes, like sisters.

Eccho, the goddess of the air, and daughter of speech, she entirely beloved of *Pan,* is an invisible goddess.

Ausonius Gallus *reporteth that she hath oftentimes dissuaded and reprehended such who would undertake to depaint her, and repeats the same in an Epigram, whose sence in English is this.*

Surcease thou medling Artist thy endeavour,
Who for thy skill hast reap'd such long liv'd fame:
Strive not to paint my bodys shape, for never
Did any humane eyes behold the same.
In concave caverns of the earth I dwell,
Daughter of th' air, and of each tatling voice,
In woods and hollow dales I build my Cell,
Joying to re-report the least heard noise,
To grief-oppress, and men disconsolate,
That tell each grove their Souls vexation,
Their dying agonies I aggravate
By their dole accents iteration.
And he that will describe my form aright,
Must shape a formless sound, or airy sprite.

CHAP.

CHAP. XIV.

The Painting of Law-givers, Emperours and Kings, and Queens,

I. *Moſes*, the Hebrew Law-giver, with bright hair; a very beautiful viſage, with radiant ſcintillations about his head, in form of hoarineſs, which in painting is called Glory.

II. *Numa Pompilius*, with white hair, crowned with a ſilver bend or Diadem; his robe Crimſon trimmed with Gold; his mantle yellow trimmed with Silver; his buskins watchet and Silver.

III. *Æneas*, the Trojane Prince, in a purple mantle trimmed with Gold.

IV. *David*, the King of *Iſrael*, with brown hair and a ruddy complexion.

V. *Alexander Magnus*, with brown hair and a ruddy complexion.

VI. *Roman Emperors*, with yellow Caruſſers embroidered with ſilver; the labels of their ſleeves, and ſhort baſes of watchet; the under ſleeves and long ſtockings, white; a Lawrel wreath, with a ſilver jewel before, and rayes of gold iſſueing from the wreath.

VII. *German Emperors*, with a violet coloured robe, watchet or light coloured.

VIII. *Mahomet*; the Turks great Prophet, in garments all of green.

IX. *Guſtavus Adolphus*, King of *Sweden*, with yellow hair.

X. *Dido*, Queen of *Carthage*, in a purple or Scarlet mantle; her under garments Purple; a Golden quiver; her

her hair yellow, tyed up with Spangs and Knots of Gold.

XI. *Elizabeth*, Queen of *England*, pale faced, light brown hair, and gray-eyed.

CHAP. XV.

The Painting of Philoſophers, and the Sybills.

I. *Pithagoras*, in white garments with a Crown of Gold.

Empedocles, in Violet, Murry, or Purple, and ſo the reſt of the *Grecian* Philoſophers.

III. *Eraſmus Roterdamus*, yellow haired, gray-eyed, and ſomewhat pale.

IV. *Beza* is painted with white hair.

V. *Sibilla Agrippa*, a woman in years in a roſeal garment.

VI. *Sibilla Libica* an elderly woman, crowned with a garland of flowers, in purple garments.

VII. *Sibilla Delphica*, with a black garment, a young woman with a horn in her hand.

VIII. *Sibilla Phrygia*, in red garments, having an old Saturnian hard favoured face.

IX. *Sibilla Herophila*, a young woman very fair in a purple garment, and head covered with a vail of Lawn.

Sibilla Europea, a comely young woman, having a high, red-coloured face, a fine vail on her head, and clad in a garment of Gold work.

XI. *Sibilla Perſica*, with a white vail, and a golden garment.

XII. *Si-*

XII. *Sibilla Samia*, a middle aged woman, clothed in Willow weeds, having a palm in her hand.

XIII. *Sibilla Helleſpontica*, a young woman in green garments, with a round, lovely, freſh coloured face; holding in her left hand a Book; and in her right hand a Pen.

XIV. *Sibilla Tiburtina*, an old woman in purple garments, of a hard viſage, holding in her Apron the books of the Sibills.

Theſe Sibills *for their Prophecies of Chriſt are in high eſteem: they are ten in number as* Varro *ſaith; yet others make twelve, of which we are not ſatisfied;* Boyſardus *in his Treatiſe of divination, beſides theſe ten addeth two others,* Epirotica *and* Ægyptia. *Some, as* Martianus, *will have but two;* Pliny *and* Solinus, *but three;* Ælian *four; and* Salmaſius *but the firſt ſeven. They are generally deſcribed as young women, yet ſome were old, as ſhe that ſold the books unto* Tarquin, *from whence we conclude the* Licentia pictoria *is very large.*

CHAP. XVI.

The Painting of Arts, Vertues, and Paſſions.

I. *Arithmetick* is painted in cloth of Gold: *Geometry*, ſallow faced, a green mantle fringed with ſilver, and a ſilver wand in her right hand: *Aſtronomy* with a ſilver Creſſant on her fore-head, an azure mantle, a watchet Scarf, with golden Stars.

II. *Faith* is painted in white garments, with a cup of Gold: *Hope* in blew, with a ſilver Anchor: *Charity* in yellow robes; on her head a tyre of Gold with precious ſtones; her chair Ivory.

III. *Re-*

III. *Religion* in a ſilver vail, with a mantle or garment of white: *Juſtice* in a white robe, and a white mantle; with a Coronet of ſilver and white buskins: *Innocency* in White wholly.

IV. *Concord* in a sky coloured robe, and a yellow mantle; *Peace* in white, ſcattered with ſtars, or a carnation mantle fringed with Gold, a vail of ſilver, green buskins, and a palm in her hand in black: *Unanimity* in a blew robe, mantle and buskins, with a chaplet of blew Lillies.

V. *Wiſdom* in a white robe, blew mantle, ſeeded with ſtars: *Law* in purple robes, ſeeded with gold ſtars, a mantle of Carnation fringed with gold; purple and yellow buskins: *Government* in Amour.

VI. *Watchfulneſs* in a yellow robe; a Sable mantle fringed with ſilver, and ſeeded with waking eyes; a chaplet of turnſole; in her right hand a lamp; in her left a bell: *Confidence* in a party coloured garment: *Modeſty* in blew.

VII. *Eternity* in blew, ſeeded with Golden ſtars: *The Soul* in white garments, branched with gold and pearl, and crowned with a garland of Roſes: *Felicity* in purple trimmed with ſilver.

VIII. *Love*, in Crimſon fringed with gold, a flame coloured Mantle, a chaplet of red and white Roſes: *Natural affection* in Citron colour: *Envy* in a diſcoloured green garment full of eyes.

IX. *Joy* in a green robe, and a mantle of divers colours, embroidered with flowers; a garland of Myrtle; in her right hand a Cryſtal Cruiſe; in her left, a golden Cup: *Pleaſure* in light garments, trimmed with ſilver and gold: *Laughter* in ſeveral Colours.

X. *Wit*, in a diſcoloured mantle: *Follity*, in flame colour: *Paſtime*, in purple trimmed with gold.

XI. *Opinion*, in black Velvet, black cap, with a white

white fall: *Impudence* in a party coloured garment: *Audacity* in bluſh colour.

XII. *Honour* in a purple robe wrought with gold: *Liberty* in white: *Safety* in Carnation

CHAP. XVII.

Of Colours for Painting Glaſs.

I. *Yellow.* Take a very thin piece of pure fine ſilver, and dip it into melted brimſtone; take it out with a pair of plyers, and light it in the fire, holding it, till it leaves burning; then beat it to powder in a braſen mortar; then grind it with Gum Arabick water, and a little yellow Oker.

II. *Yellow.* Take fine ſilver one Drachm, Antimony in powder two drachms, put them in a hot fire, in a crucible for half an hour, and then caſt it into a braſs mortar, and beat it into powder, to which add yellow Oker ſix Drachms, old earth of ruſty Iron ſeven Drachms, grind all well together.

This is fairer than the former.

III. *White* This is the colour of the glaſs it ſelf; you may diaper upon it with other glaſs or Cryſtal ground to powder.

IV. *Black.* Take Jet and Scales of Iron, and with a wet feather take up the Scales that fly from the Iron, after the Smith hath taken his heat, grind them with gum water.

V. *Black.* Take Iron ſcales, Copper ſcales of each one Drachm, heat them red hot in a clean fire ſhovel; then take Jet half a Drachm, firſt grind them ſmall and temper them with gum water.

VI. *Red*

VI. *Red.* Take *Sanguis Draconis* in powder, put to it rectified ſpirit of wine; cover it cloſe a little while, and it will grow tender; wring it out into a pot, that the droſs may remain in the cloth; the clear preſerve for uſe. This is a fair red.

VII. *Carnation.* Take tin glaſs one ounce; jet three ounces: red oker five ounces: gum two drachms, grind them together. It is a fair Carnation.

VIII. *Carnation.* Take jet four Drachms: tin glaſs or litharge of ſilver two Drachms: gum, and ſcales of Iron of each one Drachm, red chalk one ounce, grind them.

IX. *Green.* Take Verdigrieſe and grind it well with Turpentine; and put it into a pot; warming it at the fire, when you uſe it.

X. *Blew.* Provide the cleareſt leads you can get of that colour, beat them to powder in a brazen mortar; take Goldſmiths Amel of the ſame colour, clear and tranſparent, grind each by it ſelf, take two parts of lead, and one of Amel, grind them together as you did the ſilver. *The ſame underſtand of Red and Green.*

CHAP. XVIII.

Of the way of Painting upon Glaſs.

I. THere are two manner of ways of painting upon glaſs; the one is for oyl colour, the other for ſuch colours, as are afterwards to be annealed or burnt on.

II. To lay oyl colours upon glaſs, you muſt firſt grind them with Gum water once, and afterwards temper it with Spaniſh Turpentine, lay it on and let it dry by the fire, and it is finiſhed.

III. To anneal or burn your glaſs, to make the colours abide, you muſt make a four ſquare brick furnace, eighteen inches broad and deep; lay five or ſix croſs Iron bars on the top of it, and raiſe the furnace eighteen inches above the bars: then laying a plate of Iron over the bars, ſift (through a ſive) a lay of ſlack'd lime over the plate, upon which lay a row of glaſs; upon that a bed of lime, and upon that lime, another row of glaſs; thus continue *ſtratum ſuper ſtratum*, till the furnace is full.

IV. Lay alſo with every bed of glaſs a piece of glaſs, which you may wipe over with any Colour (theſe are called watches;) and when you think your glaſs is burnt enough, with a pair of plyers take out the firſt and loweſt watch, and lay it on a board, and being cold, try if you can ſcrape off the Colour, if it hold faſt on, take out that row; always letting it abide the fire till the colour will not ſcrape off.

CHAP. XIX.

Of Waſhing, and the Materials thereof.

I. BY waſhing, here we intend nothing elſe, but either to ſet out Maps or Printed Pictures in proper Colours, or elſe to varniſh them.

II. The Inſtruments and materials of waſhing are chiefly ſix, to wit, 1. *Alom-water*, 2. *Size*, 3. *Liquid Gold*, 4. *Pencils*, 5. *Colours*, 6. *Varniſh*.

III. *To make Alom water.* Take Alom eight ounces, fair water a quart, boil them till the Alom is diſſolved.

IV. *To make ſize.* Take glew, which ſteep all night in

in water, then melt it over the fire, to ſee that it be neither too ſtrong nor too weak: then ſet a little of it cool; if it be too ſtiff when it is cold, put more water to it, if too weak more glew, uſing it lukewarm.

V. *Liquid Gold.* It is exactly made by the firſt Section of the 21 Chapter of the ſecond Book.

VI. *Pencils* are to be of all ſorts both fitch'd and pointed; as alſo a large pencil bruſh to paſt Maps upon Cloth; another to wet the paper with Alom water; a third to ſtarch the face of the picture withal before it be coloured; and a fourth to varniſh withal.

VII. The colours are the ſame with thoſe which we mentioned in *Chap. 17. lib. 2.* to which add, 1. *Of Black*, Printers black, Franckford black, 2. *Of Red*, Vermilion, Roſſet, 3. *Of Blew*, Verditure, Litmos, Flory, 4. *Of Yellow*, Cambogia, Yellow berries, Orpiment, 5. Brazil, Logwood (ground) and Turnſole, Cochenele, Madder.

CHAP. XX.

Of Colours ſimple for Waſhing.

I. *Printers black.* Vermilion, Roſſet, Verditure, and Orpiment are to be ground, as we have taught at the fifth Section of the 22 Chapter of the ſecond Book.

II. *Brazil.* To ſome ground Brazil put ſmall Beer and Vinegar, of each a ſufficient quantity, let it boil gently a good while, then put therein Alom in powder to heighten the Colour, and ſome gum Arabick to bind it; boil it till it taſte ſtrong on the tongue, and make a good red.

III. *Logwood.* Ground Logwood boiled as Brazil,

makes a very fair transparent Purple Colour.

IV. *Cochenele.* Steeped as Brazil was boiled, makes a fair transparent purple: as thus, take Cochenele and put it into the strongest Sope lees to steep, and it will be a fair purple, which you may lighten or deepen at pleasure.

V. *Madder.* Take Madder four drachms, ground Brazil one ounce, Rain water a quart; boil away a third part: then add Alom half an ounce, boil it to a pint; then gum Arabick one ounce, which boil till it is dissolved, cool it stirring it often, and strain it for use. It is a good scarlet die for Leather.

VI. *Verdigriese.* Take Verdigriese ground finely one ounce, put to it a good quantity of common varnish, and so much oyl of Turpentine, as will make it thin enough to work withal; it is a good green. And Verdigriese, Alom, of each one Drachm, Logwood three Drachms, boiled in Vinegar, make a good Murry.

VII. *Gambogia.* Dissolve it in fair spring water, and it will make a beautiful and transparent yellow: if you would have it stronger, dissolve some Alom therein: it is good for Silk, Linnen, white Leather, Parchment, Vellom, Paper, Quills, &c.

VIII. *To make Verdigriese and Ceruse according to Glauber.*

These colours are made with Vinegar in earthen pots set into hot horse dung: but if you dissolve your Venus or Saturn with spirit of Nitre, and precipitate your Venus with a lye made of Salt of Tartar, and your Saturn with Salt water, edulcorating and drying them; the Venus will yield an excellent Verdigriese, which will not corrode other colours as the common Verdigriese doth; and the Saturn yields a Ceruse whiter and purer than the ordinary: much better for Painting or Chirurgery.

IX. *Yel-*

IX. *Yellow Fuſtick berry.* Boil it in water or ſteep them in Alom water, it makes a good yellow for the ſame purpoſe.

X. *Turnſole.* Put it into ſharp Vinegar over a gentle fire, till the Vinegar boil, and is coloured; then take out the Turnſole and ſqueeze it into the Vinegar, in which diſſolve a little gum Arabick; it ſhadows very well on a Carnation or yellow.

XI. *Litmos.* Cut it into ſmall pieces, and ſteep it a day or two in weak gum Lake water, and you will have a pure blew water to waſh with.

XII. *Flory Blew.* Grind it with Glair of Eggs, if then you add a little Roſſet it makes a light Violet Blew; mixed with White and Red Lead, it makes a Crane feather Colour.

XIII. *Saffron* Steeped in Vinegar and mixed with gum water is a good Yellow.

CHAP. XXI.

Of Compounded Colours for Waſhing.

Orange Colour. Red Lead and Yellow berries make a good Orange Colour: or thus, take Arnotto half an ounce, Pot aſhes one Drachm, water one pound, boil it half away, then ſtrain it, and uſe it hot.

It is good for white leather, paper, vellom, quills, parchment, &c.

II. *Green.* Take diſtilled vinegar, filings of Copper, digeſt till the vinegar is blew, which let ſtand in the Sun or a ſlow fire till it is thick enough, and it will be a good green.

Or thus. *Take Cedar green (which is best of all) or instead thereof green Bice, steep it in Vinegar, and strain it; then grind it well with fair water, and put to it a little honey, and dry it well; when you use it, mix it with gum water.*

III. *To make fine Indico.*

Take the blossoms of Wode three ounces, Amylum one ounce, grind them with Urine and strong vinegar, of which make a Cake, then dry it in the Sun and so keep it for use.

IV. A *Blew to wash upon paper.*

Take of the best azure an ounce, Kermes two ounces, mix them, which temper with clear gum water, and it will be a glorious Colour.

V. *To make a Venice Blew.*

Take quick lime, make it into past with strong vinegar, half an hour after put thereto more vinegar to soften it; then add Indico in fine powder one ounce, mix them and digest it in horse dung for thirty or forty days.

VI. *Another excellent Blew.*

Mix fine white Chalk with juice of elder berries full ripe, to which put a little Alom water.

VII. *To make blew Smalt.*

Take fluxible sand, Sal Nitre and Cobalt, mix them together.

VIII. A *lively yellow.*

Dissolve orpiment in gum water, to which put a little ground Vermilion; grind them together and you shall have a very lively colour.

IX. A *light green.* Take Juice of Rew, Verdigrise, and Saffron, grind them well together and use them with gum water.

Or thus; *Take sap green, flower de bice, or tawny green, which steep in water: Verditure and Ceruse mixt with*

with a little copper green, make a good light colour.

X. *Blew.* Ultramine, blew bice, ſmalt, and Verditure, ground ſingly with gum water, or together, make a good blew.

XI. *Brown.* Ceruſe, red lead, Engliſh Oker, and pink, make a good brown.

XII. *Spaniſh Brown.* To colour any horſe, dog, or the like, you muſt not calcine it; (yet not calcined it is a dirty colour:) but to ſhadow Vermilion, or lay upon any dark ground, behind a picture, to ſhade berries in the darkeſt places, or to colour wooden poſts, wainſcot, bodies of trees and the like, it is very good (being burnt.)

XIII. *Fleſh colour.* Mix white, Indian lake, and red lead (according as you would have it light or deep;) and to diſtinguiſh a mans fleſh from a womans, mingle with it a little Oker.

XIV. *Colours of Stones.* Verdigriese with Varniſh makes an Emerald: with Florence lake a Ruby: with Ultramanine a Saphyr.

XV. A *never fading green.*

Take juice of flowers of Flowerdeluce, put it into Gum water and dry it in the Sun.

CHAP. XXII.

Of mixing Colours and ſhadowing.

I. IN mixing be careful not to make the colour too ſad, nor take the pencils out of one colour and put them into another.

II. In mixing colours, ſtir them well about the water ſeverally till they are well mixed; then put them together, making the colour ſadder or lighter at pleaſure.

III. *Green* is ſhadowed with Indico and yellow berries.

IV. *Blew* is ſhadowed with Indico, Litmoſe and flory; or any of them being ſteeped in lees of Soap aſhes, and uſed with gum water.

V. *Garments* are ſhadowed with their own proper colours: or you may mingle the colour with white (for the light) and ſhadow it with the ſame colour unmingled: or you may take the thinneſt of the colour for the light, and ſhadow with the thickeſt or bottom of the ſame.

VI. *Sap green* is only uſed to ſhadow other greens with, and not to be laid for a ground in any garment.

VII. *Lake* ought not to be ſhaded with any colour, for it is a dark red; but for variety you may ſhadow it with Bice, or blew Verditure, which will make it like changeable Taffata.

VIII. The ſhadow for *Yellow Berries* is Umber; but for beauties ſake with red Lead, and the darkeſt touches with Spaniſh brown; and for variety with Copper green, blew Bice or Verditure.

IX. *White* ſets off *blews and blacks* very well: *Red* ſets off well with *yellows*: *Yellow* with *reds*, ſad blews, browns, greens, and purples.

X. *Blew* ſets off well with *yellows*, *reds*, *whites*, *browns*, *and blacks*: and *Green* ſets off well with *purples*, and *reds*.

CHAP.

CHAP. XXIII.

Of Colours for Landskips.

I. GReen mixed with white, pink, bice, maſticot, ſmalt, indico, or ceruſe; or blew verditure mixt with a few yellow berries makes a good green for Landskips.

II. For the *ſaddeſt hills* uſe umber burnt; for the *lighteſt places*, put yellow to the burnt umber: for *other hills* lay copper green thickened on the fire, or in the Sun: for the next *hills further off*, mix yellow berries with copper green; let the fourth part be done with green verditure; and the *fartheſt and fainteſt places* with blew bice; or blew verditure mingled with white, and ſhadowed with blew verditure, in the ſhadows indifferent thick.

III. Let the *high-ways* be done with red and white lead, and for variety yellow oker; ſhadow it with burnt umber, which you may uſe for ſandy rocks and hills.

IV. *Rocks* may be done with ſeveral colours, in ſome places black and white, in other places red and white, and in others blew and white, and the like, as you ſee convenient.

V. *The water* muſt be black verditure and white, ſhadowed with green and blew verditure: when the *banks* caſt a green ſhadow upon the water, and the water is dark ſhadowed, then ſhade it with indico, green thickned, and blew verditure.

VI. Colour *buildings* with as much variety of pleaſant colours as may be imaginable, yet let reaſon be your rule in mixing your colours: you may ſometimes

uſe

uſe white and black for the *wall*, *conduits* or other things: for *Brick-houſes* and the like, red lead and white: if *many houſes* ſtand together, ſet them off with variety of colours, as umber and white; lake and white; red lead and white, and the like.

VII. Laſtly, *for the ſky*, uſe maſticot or yellow berries, and white: for the *loweſt and lighteſt places*; red roſſet and white for the *next degree*; blew bice and white for *the other*; blew bice, or blew verditure for *the higheſt*.

Theſe degrees and colours muſt be ſo wrought together, that the edge of each colour may not receive any ſharpneſs; that is, ſo as that you cannot perceive where you began to lay them, being ſo drowned one in another.

CHAP. XXIV.

Of the practice of Waſhing.

I. WIth the *Alom-water* wet over the pictures to be coloured, for that keeps the colours from ſinking into the paper, and will add a luſtre unto them, make them ſhew fairer, and keep them from fading.

II. Then let the paper dry of it ſelf (being waſhed with *Alom-water*) before you lay on the colours; or before you wet it again, for ſome paper will need wetting four or five times.

III. The waſhing of the paper with the *Alom-water* muſt be done with a large pencil bruſh, ſuch as we have adviſed to at the ſixth Section of the nineteenth Chapter of this Book.

IV. But if you intend to *varniſh* your pictures after you have coloured them; inſtead of waſhing them with Alom water, firſt ſize them with new ſize, made of good white ſtarch, with a very fine bruſh; and this

you

you muſt be ſure to do all over, for elſe the varniſh will ſink through.

V. Having thus prepared your work, go to laying on your Colours according to the former directions, ſuiting them, as near as may be, to the life of everything.

VI. The picture being painted, you may with eaſe (at the fourth Section of the nineteenth Chapter of this Book) paſte your maps or pictures upon cloth, thus: wet the ſheet of cloth therein, wring it out, and ſtrain it upon a frame, or nail it upon a wall or board, and ſo paſte your maps or pictures thereon.

VII. *Laſtly*, if the picture be to be *varniſhed*, having thus fixed it into its proper frame, then varniſh it with a proper *varniſh* (by the following rules) and the work will be fully finiſhed.

CHAP. XXV.

Of the making of Varniſhes.

I. *Varniſh for painting in Oyl.*

Take Maſtich two ounces, Oyl of Turpentine one ounce; put the Maſtich in powder into the Oyl, and melt it over the fire, letting it boil little or nothing (leſt it be clammy;) when it is enough, you may know by putting in a hens feather, for then it will burn it.

II. *Varniſh for painted pictures.*

Take white Rozin one pound, Plumb-tree gum (or gum Arabick) Venice Turpentine, Linſeed oyl, of each two ounces; firſt melt the Rozin and ſtrain it very hot; ſteep the Gum in oyl Olive (oyl ben is better) till it is diſſolved, and ſtrain it, to which put the Turpentine and Rozin, and over a ſlow fire mingle them till they

they are well diſſolved. When you uſe it, uſe it hot.

III. *Another for the ſame.*

Take Olibanum and gum Sandrack in powder, which mingle with Venice Turpentine, melting and incorporating them ſtill over a gentle fire; then ſtrain it hot.

When you uſe it let it be hot, and your Varniſh will ſhine well; it dries immediately.

IV. *Another for the ſame.*

Take oyl of Linſeed, which diſtill in a glaſs Retort, one ounce, fair Amber diſſolved three ounces, mix them over a ſlow fire, and it is done.

V. *A very good Varniſh for Gold, Silver, Braſs, Iron Stone, Wood, Vellom or Paper.*

Take Benjamin (made into fine powder between two papers) put it into a vial, and cover it with Spirit of Wine four fingers above it, and let it ſtand three or four days, then ſtrain it, and it will be bright and ſhining, drying immediately, and retaining its brightneſs many years.

If you varniſh Gold, or any thing gilded, before the ſtraining you ſhould put in a few blades of Saffron for colour ſake: but if Silver or any thing white, you ought to uſe the white part of the Benjamin only.

VI. *A varniſh particularly for Gold, Silver, Tin, or Copper.*

Take Linſeed oyl ſix ounces, Maſtich, Aloes Epatick of each one ounce; put the gums in powder into the Oyl, into a glazed earthen pot, which cover with another, luting them together, in the bottom of which, let be a hole, whereinto put a ſmall ſtick with a broad end to ſtir withal; cover them all over with clay, (except the hole) ſet it over the fire, and ſtir it as often as it ſeetheth for a little while, then ſtrain it for uſe. Firſt let the metal be poliſhed, then ſtrike it over with this varniſh.

VII. A

VII. A *Varniſh for Wood and Leather.*

Take Tincture of Saffron or Turmerick in Spirit of Wine a pint, prepared gum Lake a ſufficient quantity, diſſolve the gum in the tincture and it is done.

This is a Varniſh of great uſe to lay over Gold and Silver or any thing which is expoſed to the Air.

VIII. *To make the Common Varniſh.*

Take ſpirit of Wine a quart, Rozin one ounce, Gum Lake a ſufficient quantity, diſſolve the gums in a gentle heat (being cloſe covered) and let them ſettle: then gently decant off the clear, which keep in a cloſe glaſs Bottle for uſe.

The thick which remains, you may ſtrain through a cloth, and keep for other purpoſes.

IX. *To make a red Varniſh.*

Take ſpirit of Wine a quart, gum Lake four ounces, *Sanguis Draconis* in fine powder eight ounces, Cochenele one ounce, digeſt a week over a gentle heat, then ſtrain it for uſe.

X. *To make a yellow Varniſh.*

Take ſpirit of Wine a pint, in which infuſe (three or four days) Saffron half an ounce, then ſtrain it, and add Aloes Succotrina one ounce, *Sanguis Draconis* two ounces, which digeſt a week over a gentle heat cloſe covered, then ſtrain it for uſe.

XI. *An Univerſal Varniſh, the beſt of all others.*

Take good gum Sandrick (but gum Anime is better) diſſolve it in the higheſt rectified ſpirit of Wine (an ounce and a half more or leſs to a pint) and it is done.

Where note 1. *That unleſs the Spirits be highly rectified, the Varniſh cannot be good.* 2. *That ſome put into it Linſeed oyl (which is naught; oyl of ben is better) and mix them together.* 3. *Some mix boiled Turpentine with it; others Chymical oyls of deep colours (as of Cloves, Mace, Nut-*

megs, Caraways, Cinnamon) according to the intent. 4. *That it ought to be kept in a glass bottle close stopped, lest it curdle, and the gums separate.*

CHAP. XXVI.

Of the manner of Varnishing.

I. THe intent of Varnishing is either to preserve the gloss of paintings or pictures, or else to represent and imitate the forms of shining and perlucid bodies.

II. To varnish paintings and pictures, 'tis no more but with a pencil dipt in the Varnish to go over the same, then letting it dry; and so going over it so often as in reason you shall see convenient.

III. If you are to imitate any thing, as Marble, Tortoise shell, Amber, *Lapis Lazuli* or the like; you must first make the imitation of them, upon that which you would Varnish, with their proper colours, as in Limning or Painting with oyl; which must be throughly dry: then by the second *Section* go over all with the Varnish, so often till you see it thick enough; letting it dry every time leisurely. *For example sake;*

IV. *To imitate Marble.*

Take of the Universal *Varnish* at the eleventh Section of the five and twentieth Chapter, with which mingle Lamp black (or other black) and white Lead finely beaten, and with a brush pencil, marble the thing you would *Varnish* according to your fancy; lastly, being dry strike it again two or three times over with the clear *varnish* alone, and it will be perfect.

V. *To imitate Tortoise shell.*

First

First lay a white ground, then with convenient colours (as Vermilion with Auripigment) duly mixt with Common Varniſh, ſtreak and ſhadow the white ground with any wild fancy (as nearly imitating Tortoiſe ſhell as you can) which being dry, ſtrike it here and there with the red *Varniſh* (mixed with a little Sinaper or Indian Lake) then up and down the work as nature requires touch it with varniſh mixed with any good black; then ſtroke it over with Univerſal *Varniſh* four or five times, letting it dry every time; laſtly, let it dry well a week, and with Pumice ſtone (in fine powder) and a wet cloth poliſh it by rubbing; then go over it again three or four times with the Univerſal *Varniſh*, and (if need require) poliſh it again with fine putty as before; after which you may once again ſtrike it over with the ſaid Varniſh, and it will be done.

VI. *To imitate Tortoiſe ſhell upon ſilver or gold.*

A white ground being laid, and ſmeared over with Vermilion or the like; lay over the ſame leaves of ſilver or gold (as we have taught in other places) either with gum Ammoniacum, Lake, common *varniſh* or glair; this done, and being dryed, ſhadow it according to reaſon; ſtriking it over here and there with yellow *varniſh*, and with the yellow *varniſh* mixed with a little red *varniſh*; (all things being done in imitation of the ſhell) ſtrike it ſeveral times over with the Univerſal *Varniſh*, and poliſh it (in all reſpects) as before.

VII. *To imitate* Lapis Lazuli.

Upon a ground of white Lead, Spodium or the like in common Varniſh (being firſt dry) lay *Ultramarine* or ſome other pure *blew* well mixed with the Univerſal Varniſh, ſo as that the ground may not appear: then with wild, irregular ſtreaks (in reſemblance of Nature)

with

with liquid or ſhell gold, run ſtragſingly all over the blew, adding very ſmall ſpecks upon the blew part, of ſuch various colours, as are uſually to be ſeen upon the ſtone.

CHAP. XXVII.

Experimental Obſervations of Vegetable Colours in General.

I. A Strong infuſion of galls filtred; mixed with a ſtrong and clear ſolution of Vitriol, makes a mixture as *black as Ink*: which with a little ſtrong oyl of Vitriol is made *tranſparent* again: after which the *black* colour is regained again, by the affuſion of a little quantity of a ſtrong ſolution of ſalt of Tartar.

The firſt black (although pale in writing, yet) being dry, appears to be good Ink.

II. Decoction of dried red roſes, in fair water, mixed with a little filtrated ſolution of blew vitriol made a black colour: this mixed with a little *Aqua fortis*, turn'd it from a black, to a deep red; which by affuſion of a little ſpirit of Urine, may be reduced ſtraight to a thick and *black colour.*

III. *Yellow wax* is whitened by diſſolving it over the fire in ſpirit of wine, letting it boil a little, and then exhaling the ſpirit of wine; or elſe whilſt it is hot, ſeparating it by filtration.

IV. Fair water mixed with a blood red Tincture of *Benjamin* drawn with ſpirit of wine, immediately makes it of a milk white colour.

V. *Blackneſs* may be taken away with oyl of Vitriol; ſo black pieces of ſilk or hair I have turn'd to a kind of yellow.

VI. A

VI. A handful of *Lignum Nephriticum* raſped, infuſed in four pound of ſpring water, yields between the light and the eye an almoſt golden colour (unleſs the Infuſion be too ſtrong) but with the eye between the light and it (in a clear vial) a lovely blew as indeed it is: this with ſpirit of Vinegar may be made to vaniſh (ſtill keeping its golden colour) and after with oyl of Tartar *per deliquium* may be reſtored again.

VII. Cloths died with blew and Woad, is by the yellow decoction of *Luteola* died into a green.

VIII. Syrup of Violets mixed with a high ſolution of Gold in *Aqua regia*, produces a reddiſh mixture; and with a high ſolution of filings of Copper in ſpirit of Urine, a lovely fair green.

IX. Syrup of Violets mixed with a little juice of Lemons, ſpirit of Salt, vinegar, or the like acid ſalt, will be immediately red; but mixt with oyl of Tartar, or a ſolution of pot aſhes, it will in a moment be perfect green: the like in juice of blew bottles.

X. A good quantity of oyl of Tartar, put into a ſtrong ſolution of Verdigrieſe, gives a delightful blew; which may be variouſly changed by adding ſpirit of Urine, or hartſhorn.

XI. Although red roſes hung over the fume of Sulphur, loſe all their redneſs, and become white: yet oyl of Sulphur (which is nothing but the fumes condenſed) doth wonderfully heighten the tincture of the ſame.

XII. *Cochenele* will have its colour far more heightned by Spirit of Urine, than by rectified ſpirit of wine: And one grain of Cochenele in a good quantity of ſpirit of Urine, being put into one hundred twenty ſix ounces of water, tinged it (although but faintly;) which amounts to above one hundred twenty five thouſand times its own weight.

XIII. Twenty grains of *Cochenele* being mixed with an ounce of *Saccharum Saturni*, makes a moſt glorious purple colour: and ſo accordingly as the quantity is either diminiſhed or encreaſed, ſo the purple colour ſhall be either lighter or deeper.

XIV. A few Grains of *Cochenele* being mixed with the *Lixivium* of Quicklime in a due proportion, makes a fading purple colour, of the greateſt glory imaginable in the world.

XV. The juice of privet berries with ſpirit of ſalt, is turned into a lovely red: but with a ſtrong ſolution of pot aſhes into a delightful green.

XVI. Upon things red by nature, as ſyrup of Clove-gilliflowers, juice of Buckthorn berries infuſion, of red roſes, Brazil, &c. Spirit of Salt makes no conſiderable change, but rather a lighter red: but other ſalts turn them into a greeniſh; eſpecially juice of buckthorn berries.

XVII. Juice of *Jaſmin* and ſnow drops, by a ſtrong *alcalizate* ſolution, was (although of no colour) turned into a deep greeniſh yellow.

XVIII. *Buckthorn berries* being gathered green and dried, are called *ſap-berries*, which being infuſed in *Alom water* gives a fair yellow (*which is uſed by Book-binders for the edges of their books, and to colour leather alſo*:) being gathered when they are black, they are called *ſap green*, and make a green colour being put into a braſs or copper veſſel for three or four days; or a little heated upon the fire, and mixed with Alom in powder, and preſſed forth; ſo put into bladders, hanging it up till it is dry: And being gathered about the end of *November*, (when they are ready to drop) they yield a purpliſh colour.

XIX. Tincture of *Cochenele*, diluted never ſo much with fair water, will never yield a yellow colour: a

ſingle

ſingle drop of a deep ſolution in ſpirit of Urine, diluted in an ounce of fair water, makes a fair pink, or carnation.

XX. Oyl or ſpirit of Turpentine, digeſted with pure white Sugar of lead, yields in a ſhort time a high red tincture, which Chymiſts call *Balſamum Saturni.*

XXI. Spirit of Salt dropt into a ſtrong infuſion of *Cochenele* or juice of black cherries, makes immediately a fair red: but dropt into the Infuſion of Brazil, a kind of yellow: ſo the filtrated tincture of *Balauſtins* mixed with good ſpirit of Urine, or the like, turns of a darkiſh green; but with ſpirit of ſalt, a high redneſs, like rich Claret wine; which glorious colour may in a moment be deſtroyed, and turned into a dirty green, by ſpirit of Urine.

XXII. A high Infuſion of *Lignum Nephriticum*, mixed with ſpirit of Urine, gives ſo deep a blew, as to make the liquor *opacous*: which after a day or two vaniſhes, and leaves the liquor of a *bright amber colour.*

Where note that inſtead of Spirit of Urine you may uſe oyl of Tartar, or a ſtrong ſolution of pot aſhes.

XXIII. Infuſion of Logwood in fair water (mixt with ſpirit of *Sal Armoniack*) ſtraight turns into a deep, rich, lovely purple; two or three drops to a ſpoonful is enough, leſt the colour be ſo deep, as to be opacous.

XXIV. Spirit of *Sal Armoniack* will turn ſyrup of Violets to a lovely green.

XXV. Infuſion of *Litmoſs* in fair water, gives in a clear glaſs a purple colour: but by addition of ſpirit of Salt, it will be wholly changed into a *glorious yellow.*

XXVI. The Infuſions and juices of ſeveral plants, will be much altered by a ſolution of Lead in ſpirit of Vinegar: it will turn infuſion of red roſe leaves into a ſad green.

XXVII. So Tincture of red roſes in fair water, would be turned into a thick green, with the ſolution of *Minium* in ſpirit of Vinegar; and then with the addition of oyl of Vitriol the reſolved Lead would precipitate white, leaving the liquor of a clear, high red colour again.

XXVIII. We have not yet found, that to exhibit ſtrong variety of colours, there need be imployed any more than theſe five, White, Black, Red, Blew, Yellow: *for theſe being variouſly compounded and decompounded exhibit a variety and number of colours; ſuch as thoſe who are ſtrangers to painting can hardly imagine.*

XXIX. So *Black and White* variouſly mixed, make a vaſt company of light and deep *Grays*: *Blew and Yellow*, many *Greens*: *Red and Yellow*, *Orange-tawnies*: *Red and White*, *Carnations*: *Red and Blew*, *Purples*, &c. producing many colours for which we want names.

XXX. Acid ſalts deſtroy a blew Colour: Sulphurous, Urinous or fixed reſtore it.

XXXI. Acid and *Alcalizate* ſalts, with many bodies that abound with *Sulphureous* or oyly parts will produce a red, as is manifeſt in the Tincture of Sulphur, made with *Lixiviums* of Calcined Tartar or pot aſhes.

XXXII. Laſtly, it may be worth tryal (ſince it hath ſucceeded in ſome experiments) ſo to take away the colour of a Liquor, as that it may be colourleſs: which in what we have tryed, was thus: firſt by putting into the Tincture, Liquor, or juice, a quantity of the ſolution of pot aſhes or oyl of Tartar *per deliquium*; and then affuſing a good or ſtrong ſolution of Alom, which in our obſervations precipitated the tinging matter, or gathered it into one body (like as it were curds) and ſo left the Liquor *tranſparent and clear as Cryſtal.*

CHAP.

CHAP. XXII.

General Experimental observations of Mineral Colours.

I. *Sublimate* dissolved in fair water, and mixed with a little spirit of Urine, makes a *milk white* mixture in a moment: which by addition of *Aqua Fortis*, immediately again becomes *transparent*.

II. If *Sublimate* two ounces, and *Tin-glass* one ounce be sublimed together, you will have a sublimate not inferiour to the best *orient Pearls* in the world.

III. *Silver* dissolved in *Aqua fortis*, and evaporated to dryness, and fair water poured two or three times thereon, and evaporated, till the *calx* is dry, leaves it of a *Snow whiteness*: which rubbed upon the skin, (wetted with spittle, water or the like) produces a deep *blackness*, not to be obliterated in some days.

With this, Ivory, hair, and horns may be dyed in fair water of a lasting black.

IV. *Coral* dissolved by oyl of vitriol, Sulphur, or spirit of Vinegar, and precipitated by oyl of Tartar, yields a *Snow whiteness*. The same of crude Lead and Quicksilver dissolved in *Aqua Fortis*: So butter of *Antimony* rectified by bare affusion in much fair water, will (though Unctuous) be precipitated into that *Snow white* powder which (being washed from its corrosive salts) is called *Mercurius Vitæ*: the like of which may be made without the addition of any Mercury at all.

V. *Mercury Sublimate* and *precipitate* yields (with the spirit of Urine, Harts horn, or the like) *a white precipitate*: but with the solution of *Pot ashes*, or other

Lixiviate ſalts an *Orange tawny*. And if on a filtrated ſolution of *Vitriol*, you put the ſolution of a *fixed ſalt*, there will ſubſide a copious ſubſtance far from whiteneſs, which Chymiſts call the Sulphur of Vitriol.

VI. If Copper two ounces be mixed with Tin one ounce, the reddiſhneſs will vaniſh: and if Arſenick (calcined with Nitre) in a juſt proportion be mixed with melted Copper, it will be blanched both within and without.

VII. Fine powders of blew Bice, and yellow Orpiment, ſlightly mixed, give a good green: and a high yellow ſolution of good Gold in *Aqua regia*, mixed with a due quantity of a deep blew ſolution of crude Copper in ſtrong ſpirit of Urine, produces a *tranſparent green*: And ſo blew and yellow *Amel* fuſed together in the flame of a Lamp, being ſtrongly blowed on without ceaſing, produces at length a *green colour*.

VIII. An urinous ſalt, largely put into the diſſolution of blew Vitriol in fair water, turn'd the liquor and corpuſcles (which reſided) into a yellowiſh colour like yellow Oker.

IX. *Verdigrieſe* ground with ſalt *Armoniack* and the like (digeſted for a while in a dunghil) makes a *glorious blew*.

X. The true glaſs of *Antimony* extracted with acid ſpirits (with or without Wine) yields a *red tincture*.

XI. Balſam of Sulphur (of a deep red in the glaſs) ſhaked about, or dropt on paper give a yellow ſtain.

XII. If Brimſtone and *Sal Armoniack* in powder of each five ounces, be mixed with quick-lime in powder ſix ounces, and diſtilled in a Retort in ſand by degrees; you will have a volatil ſpirit of Sulphur of excellent redneſs, though none of the ingredients be ſo.

So alſo oyl of Anniſeeds mixed with oyl of Vitriol, gives

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in a trice a blood red colour, which ſoon decays.

XIII. Fine ſilver diſſolved in *Aqua fortis*, and precipitated with ſpirit of Salt; upon the firſt decanting the liquor, the remaining matter will be *purely white*; but lying uncovered, what is ſubject to the ambient air will loſe its whiteneſs.

XIV. *Sublimate* diſſolved in a quantity of water and filtred, till it is as clear as *Cryſtal*, mixed (in a Venice glaſs) with good oyl of Tartar *per deliquium* filtred, (three or four drops to a ſpoonful) yields an opacous liquor of a deep *Orange colour*; after which if four or five drops of *Oyl of Vitriol* be dropt in, and the glaſs ſtraightway be ſtrongly ſhaked, the whole liquor will (to admiration) be *colourleſs without ſediment*. And if the filtred ſolution of *ſublimed Sal-armoniack* and *Sublimate* of each alike be mixt with the ſolution of an *Alcaly*, it will be *white*.

XV. Spirit of *Sal Armoniack* makes the ſolution of *Verdigrieſe* an excellent *Azure*; but it makes the ſolution of *Sublimate* yield a white precipitate.

XVI. So the ſolution of filings of Copper in ſpirit of Urine (made by fermentation) gives a lovely Azure colour: which with *oyl of Vitriol* (a few drops to a ſpoonful) is *deprived* in a trice of the ſame, and makes it like *fair water*. And ſo a ſolution of *Verdigrieſe* in *fair water*, mixed with ſtrong *Spirit of Salt*, or dephlegmed *Aqua fortis*, makes the *greenneſs* almoſt totally to diſappear.

XVII. Quick-ſilver mixed with three or four times its weight of good oyl of Vitriol, and the oyl drawn off in ſand, through a glaſs Retort, leaves a *ſnow white precipitate*; which by affuſion of fair water, becomes one of the lovelieſt *light yellows* in the world, *and a durable colour*.

XVIII. Tin calcined *per ſe* by fire, affords a very white

calx called *putty*: Lead, a red powder called *Minium*: Copper, a dark or blackish powder: Iron, a dirty yellowish colour, called *Crocus Martis*: and Mercury, a red powder.

XIX. *Gold* dissolved in *Aqua Regia* ennobles the Menstruum with its own colour: *Silver* Coyn dissolved in *Aqua fortis* yields a tincture like that of Copper; but *fine silver* a kind of faint blewishness: *Copper* dissolved in spirit of Sugar (drawn off in a glass Retort) or in oyl or spirit of Turpentine, affords a green tincture; but in *Aqua fortis*, a blew.

XX. *Vermilion* is made of *Mercury* and *Brimstone* sublimed together in a due proportion.

XXI. Glass may have given to it a lovely golden colour with Quick silver; but it is now coloured yellow generally with Calx of silver: yet shell silver, (such as is used with pen or pencil) mixed with a convenient proportion of powdered glass, in three or four hours fusion, gave a lovely Saferine blew.

XXII. Glass is tinged Green (by the Glass-men) with the *Calx of Venus*: which Calx mixed with an hundred times its weight of fair glass, gave in fusion a blew coloured mass.

XXIII. *Putty* (which is Tin calcined) as it is white of it self, so it turns the purer sort of glass metal into a white mass, which when opacous enough, serves for *white Amel*.

XXIV. This *White Amel* is as it were the Basis of all those fine Concretes, that Gold-smiths, and several Artificers use, in the curious art of *Enameling*; for this white and fuseable substance, will receive into it self, without spoiling them, the colours of divers other Mineral substances, which like it will endure the fire.

XXV. Glass is also tinged blew with the dark mineral called *Zaffora*; and with *Manganess* or *Magnessia*

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in a certain proportion, which will tinge glaſs of a red Colour; and alſo of a Purpliſh or Murry; and with a greater quantity, into that deep colour which paſſes for black.

XXVI. Yellow Orpiment ſublimed with Sea Salt, yields a white and Cryſtalline *Arſenick*; which *Arſenick* coloured with pure Nitre being duly added to Copper when 'tis in fuſion, gives it a whiteneſs both within and without.

XXVII. So *Lapis Calaminaris* turns Copper into Braſs.

XXVIII. And *Zink* duly mixed with Copper when 'tis in fuſion, gives it the nobleſt golden colour that was ever ſeen in the beſt gold.

XXIX. Copper diſſolved in *Aqua fortis* will imbue ſeveral bodies of the colour of the ſolution.

XXX. Laſtly, Gold diſſolved in *Aqua Regia* will (though not commonly known) *dye Horns, Ivories and other bones of a durable purple colour:* And the Cryſtals of Silver made with *Aqua fortis*, (though they appear white) *will preſently dye the Skin, Nails, Hair, Horn, and Bones, with a Black not to be waſhed off.*

CHAP.

CHAP. XXIX.

Of Metals.

I. *To harden Quick-ſilver.*

Caſt your Lead ſeparated from its droſs into a veſſel, and when it begins to cool, thruſt in the point of a ſtick, which take out again and caſt in the Argent Vive, and it will congeal: then beat it in a mortar, and do ſo often; when it is hard, melt it often, and put it into fair water, doing it ſo long till it is hard enough, and may be hammered.

II. *To tinge Quick-ſilver of the colour of gold.*

Break it into ſmall pieces (being hardned) which put into a crucible, with the powder of *Cadmia*, *ſtratum ſuper ſtratum*, mixed with pomegranate peels, Turmerick (beaten fine) and Raiſons; cover the crucible and lute it well, dry it well; and then ſet it on a fire for ſix or ſeven hours, that it may be red hot; then blow it with bellows till it run, which then let cool whileſt covered with coles, and it will have the colour of gold.

III. *To fix Quick-ſilver being hardned.*

This is done with fine powder of Cryſtal glaſs, laid with the metal *ſtratum ſuper ſtratum* in a crucible covered and luted; heating it all over red hot, and then melting of it.

IV. *To make Quick-ſilver malleable.*

Firſt harden it by the firſt Section, then break the metal into ſmall pieces, and boil it a quarter of an hour in ſharp vinegar: then add a little Sal Armoniack, and digeſt all together for ten or twelve days; then boil all together in a luted crucible, till it is red hot, and by degrees

degrees crack: laſtly, hang the Mercury in a pot with brimſtone at bottom to cover it; lute it and ſet it into the fire, that it may grow hot by degrees, and receive the fume of the Sulphur; do thus for a month once a day, and the Mercury will run and be hammered.

V. *Another way of tinging Mercury.*

Take purified Mercury one ounce, *Sulphur* two ounces, *Aqua fortis* three ounces, let them all ſtand till the water grow clear; diſtill this with its ſediment, and at bottom of the Limbeck: you ſhall find the Mercury hard, and of an exact colour.

VI. *To colour and ſoften Gold.*

Diſſolve Verdigrieſe in Vinegar, and ſtrain it through a felt, then congeal, and when it begins to wax thick, put to it ſome Sal armoniack, and let it harden a good while, then melt gold with it, and it will heighten the colour and make it ſoft.

VII. *To make Gold and Silver ſofter.*

Take Mercury Sublimate, Sal armoniack, of each alike, powder them, melt the gold, and put to it a little of this powder, and it will be ſoft.

VIII. *Another way to do the ſame.*

Take Vitriol, Verdet, Sal Armoniack, burnt braſs of each half an ounce, mix them with Aqua fortis, let it ſo repoſe in the heat two days, then let it harden, do thus three times with Aqua fortis, and let it dry, make it into powder, to one dram put one ounce of gold three times and it will be ſofter.

IX. *Another way to do the ſame in ſilver.*

Take Salt-peter, Tartar, Salt, Verdet, boil all together, till the water is conſumed, then put to it Urine, and let it ſo conſume, and you ſhall have an oyl, which put into melted ſilver will do the ſame.

Or thus, *Take as many wedges as you have melted, put them one night into a crucible in a furnace, but ſo as they*

melt

melt not, and they will be ſoft and fair.

Or thus, *Take honey, oyl, of each alike, in which quench the Gold or Silver three or four times, and it will be ſofter.*

Or thus, *Take Maſtich, Frankincenſe, Myrrh, Borax, Vernix, of each alike, all in powder.*

Or thus, *Quench the Gold or ſilver in water of Sal armoniack, and it will be ſoft.*

X. *To tinge ſilver of a golden colour.*

Take fine gold, fine ſilver, good braſs, and braſs or copper calcin'd with Sulphur vive, of each alike, melt them down together, and it ſhall appear to be gold of eighteen carets fine.

XI. *Another way to tinge ſilver.*

Take Quick-ſilver purged three ounces, leaf gold one ounce, mix them and put them into a glaſs Retort well luted, put it on the fire till it grow hot; then take it off, and add to it Quick-ſilver purged two ounces, *Sal Armoniack* one ounce, *Sal Ellebrot* half an ounce, *Borax* two drachms; then ſeal up the glaſs hermetically, and put it into a continuual fire for three days; then take it out, let it cool, open the retort, take out the matter, and powder it very fine: of which powder mix one ounce with ſilver five ounces, and it will tinge it into a good gold colour.

Note, Sal Ellebrot is thus made. Take pure common Salt, Sal Gem, Sal alcaly in powder, of each one ounce, juice of mints four ounces, ſpring water four pound, mingle them, and evaporate. And Quick-ſilver is purged by waſhing it in ſharp vinegar three or four times and ſtraining it; or by ſubliming it which is better.

XII. *To bring ſilver into a calx.*

This is done by amalgamating of it with Quick-ſilver, and then ſubliming of it; or by diſſolving it in *Aqua fortis*, and precipitating it with the ſolution of ſalt

ſalt in fair water, and then waſhing it with warm water often to free it from the ſalts: or elſe by mingling the fillings with ſublimed Mercury, and in a retort cauſing the Mercury to aſcend, which will leave at bottom the Calx of ſilver, fit for jewels, &c.

XIII. *To blanch Silver.*

Take *Sal armoniack*, *Roch alom*, *Alom plumoſum*, *Sal gem*, *Argal*, *Roman Vitriol*, *of each alike*; powder and mix them, and diſſolve them in fair water, in which boil the ſilver ſo long, till you ſee it wonderful white.

XIV. *To colour ſilver of a Gold colour.*

Take Salt-peter two pound, Roch Alom five pound, mingle, and diſtil them, keeping the water for uſe. When you uſe it, melt the Silver, and quench it in the ſaid water.

XV. *To tinge Braſs of a Gold Colour.*

Diſſolve burnt braſs in *Aqua fortis* (made of Vitriol, Salt-peter, Alom, Verdigrieſe, and Vermilion) and then reduce it again, and it will be much of a gold colour.

XVI. *To make Braſs through white.*

Heat Braſs red hot, and quench it in water diſtilled from Sal Armoniack, and Egg-ſhells ground together, and it will be very white.

XVII. *To make Braſs white otherwiſe.*

Take egg-ſhells and calcine them in a crucible, and temper them with the whites of eggs, let it ſtand ſo three weeks; heat the braſs red hot, and put this upon it.

XVIII. *To make Braſs.*

Take Copper three pounds, *Lapis Calaminaris* one pound in powder, melt them together the ſpace of an hour, then put it out.

XIX. *The way to colour Braſs white.*

Diſſolve a peny weight of Silver in *Aqua fortis*, putting

ting it to the fire in a veſſel, till the Silver turn to water; to which add as much powder of white Tartar as may drink up all the water, make it into Balls, with which rub any Braſs, and it will be white as ſilver.

XX. *To tinge Copper of a gold Colour.*

Take Copper, *Lapis Calaminaris*, of each four drachms, Tutty two drachms; heat the Copper red hot twice, quenching it in piſs; doing the like by the *Lapis* and Tutty: take of the diſſolved Copper half an ounce, adding to it Honey one ounce, boil them till the Honey look black and is dry that it may be powdered, which then beat with the *Lapis* and Tutty: boil them again, till the Copper is melted and it is done.

XXI. *Another way to make Copper of a gold Colour.*

Take the Gall of a Goat, Arſnick, of each a ſufficient quantity, and diſtil them; then the Copper being bright being waſhed in this water, will turn into the Colour of gold.

XXII. *Another way to do the ſame.*

Melt Coppper, to which put a little *Zink* in filings, and the Copper will have a glorious golden colour.

XXIII. *To make Copper of a white colour.*

Take Sublimate, Sal Armoniack, of each alike; boil them in Vinegar, in which quench the Copper being made red hot, and it will be like Silver.

XXIV. *Another way to whiten Copper.*

Heat it red hot divers times, and quench it in oyl of Tartar *per deliquium*, and it will be white.

XXV. *Another way to whiten Copper.*

Take Arſnick three ounces, Mercury Sublimate two ounces, Azure one ounce, mix them with good and pure greaſe like an ointment, with which anoint any Copper veſſel, then put that veſſel into another, and ſet it into a digeſtive heat for two months, after which cleanſe it with a bruſh and water and it is done.

XXVI. A-

XXVI. *Another way to whiten Copper.*

Take Arſnick calcined with Salt-peter, and Mercury Sublimate, which caſt upon melted Copper, and it will be white like Silver.

XXVII. To ſoften Copper.

Melt burnt Braſs with *Borax in a crucible*, quench it in Linſeed oyl, and then beat it gently on an Anvil; boil it again and quench it in oyl as before, doing thus five or ſix times, till it is ſoft enough; and this will neatly unite with Gold, of which you may put in more by half than you can of other Braſs.

XXVIII. To tinge with Iron a gold colour.

Lay in a crucible plates of Iron and Brimſtone, *ſtratum ſuper ſtratum*, cover and Lute it well, and calcine in a fornace, then take them out and they will be brittle: put them into a pot with a large mouth, and put in ſharp diſtilled Vinegar, digeſting till they wax red over a gentle heat: then decant the Vinegar, and add new, thus doing till all the Iron be diſſolved; evaporate the moiſture in a glaſs Retort or *Veſica*, and caſt the remaining powder on Silver, or other white Metal, and it will look like Gold.

XXIX. To make Iron or Silver of a Braſs Colour.

Take Flowers of Braſs, Vitriol, *Sal armoniack*, of each alike in fine powder; boil it half an hour in ſtrong Vinegar, take it from the fire, and put in Iron or Silver, covering the veſſel till it be cold, and the metall will be like to Braſs, and fit to be gilded: or rub poliſhed Iron with *Aqua fortis* in which filings of Braſs is diſſolved.

XXX. To tinge Iron into a Braſs colour.

Melt the Iron in a crucible caſting upon it *Sulphur vive*, then caſt it into ſmall rods, and beat it into pieces (for it is very brittle) then in *Aqua fortis* diſſolve it, and evaporate the *menſtruum*, reducing the powder by a ſtrong fire into a body again, and it will be good Braſs,

XXXI.

XXXI. To whiten Iron.

First purge it, by heating it red hot and quenching it in a water made of Ly and Vinegar, boiled with Salt and Alom, doing this ſo often till it is ſomewhat *whitened.* The fragments of the Iron beat in a mortar till the Salt is quite changed, and no blackneſs is left in the Liquor of it, and till the Iron is cleanſed from its droſs: then *Amalgamate* Lead and Quick-ſilver together, and reduce them into a powder; lay the prepared plates of Iron and this powder *ſtratum ſuper ſtratum* in a Crucible, cover it, and lute it all over very ſtrongly, that the leaſt fume may not come forth, and put it into the fire for a day; at length encreaſe the fire, ſo as it may melt the Iron (which will quickly be) and repeat this work till it is white enough: It is whitened alſo by melting with Lead, the Marchaſit or fire-ſtone and *Arſnick.* If you mix a little ſilver (with which it willingly unites) with it, it gives a wonderful whiteneſs, ſcarcely ever to be changed any more, by any art whatſoever.

XXXII. To keep Iron from Ruſting.

Rub it over with Vinegar mixt with Ceruſe; or with the marrow of a Hart: if it be ruſty, oyl of Tartar *per deliquium* will preſently take it away and cleanſe it.

XXXIII. To cleanſe Braſs.

Take *Aqua fortis* and water of each alike; ſhake them together, and with a woolen rag dipt therein rub it over: then preſently rub it with an oyly cloth; laſtly with a dry woolen cloth dipt in powder of *Lapis Calaminaris*, it will be clear and bright as when new.

XXXIV. To ſoften Iron.

Take Alom, *Sal armoniack*, *Tartar*, of each alike, put them into good Vinegar, and ſet them on the fire, heat the Iron, and quench it therein: or quench it four

or five times in oyl, in which melted Lead hath been put ſix or ſeven times.

XXXV. To make Iron of a Gold colour.

Take Alom of Melancy in powder, Sea water; mix them: then heat the Iron red hot, and quench it in the ſame.

XXXVI. To make Iron of a Silver Colour.

Take powder of Sal armoniack, unſlak'd lime, mix and put them into cold water, then heat the Iron red hot, quench it therein, and it will be as white as ſilver.

XXXVII. To ſoften Steel to grave upon.

This is done with a *Lixivium* of Oak aſhes and unſlak'd Lime, by caſting the Steel into it and letting it remain there fourteen days. Or thus. Take the Gall of an Ox, Man's Urine, Verjuice, and juice of Nettles of each alike, mix them; then quench ſteel red hot therein four or five times together, and it will become very ſoft.

XXXVIII. To harden Iron or Steel.

Quench it ſix or ſeven times in Hogs blood mixed with Gooſe greaſe, at each time drying it at the fire before you dip it again, and it will become very hard and not brittle.

XXXIX. To ſolder on Iron.

Set the joints of Iron as cloſe as you can, lay them in a glowing fire, and take of Venice glaſs in powder, and the Iron being red hot, caſt the powder thereon, and it will ſolder of it ſelf.

XL. To counterfeit Silver.

Take Cryſtal Arſnick eight ounces, Tartar ſix ounces, Salt-peter two ounces, Glaſs one ounce and an half, Sublimate half an ounce; make them ſeverally into fine powder and mix them: then take three pound of Copper in thin plates which put into a Crucible

(with the former powder *ſtratum ſuper ſtatum*) to calcine, covering it and luting it ſtrongly; let it ſtand in the furnace for about eight or ten hours: then take it out, and (being cold) break the pot, and take out all the matter, and melt it with a violent fire, caſting it into ſome mold. Then take purged Braſs two pound, of the former metal one pound; melt them together, caſting in, now and then, ſome of the aforeſaid powder, after which add half as much of fine ſilver, melting them together, and you have that which is deſired: laſtly to make it as white as Silver, boil it in Tartar.

XLI. Another way to counterfeit Silver.

Take purified tin eight ounces, Quick-ſilver half an ounce, and when it begins to riſe in the firſt heat, take powder of Cantharides, and caſt into it, with a lock of hair, that it may burn in it; being melted put into it the powder aforeſaid, then take it ſuddenly from the fire, and let it cool.

XLII. To purge the Braſs.

It is cleanſed or purged, by caſting into it when it is melted, broken glaſs, Tartar, Sal armoniack, and Salt-peter, each of them by turns, by little and litle.

XLIII. To tinge Lead of a golden colour.

Take purged Lead one pound, Sal Armoniack in powder one ounce, Salt-peter half an ounce, Sal Elebrot two drachms; put all into a crucible for two days and it will be throughly tinged.

XLIV. To purge Lead.

Melt it at the fire, then quench it in the ſharpeſt Vinegar; melt it again and quench it in the juice of Celandine: melt it again and quench it in ſalt water: then in Vinegar mixed with Sal armoniack: and laſtly melt it, and put it into aſhes, and it will be well cleanſed.

XLV. To

XLV. To make Lead of a golden colour.

Put Quick-silver one ounce into a Crucible, set it over the fire till it is hot, then add to it of the best Leaf-gold one ounce, and take it from the fire, and mingle it with purified Lead melted one pound; mingle all well together with an Iron rod, to which put of the filterated solution of Vitriol in fair water one ounce; then let it cool, and it will be of a good colour. Dissolve the Vitriol in its equal weight of water.

XLVI. To take away the ringing and softness of Tin.

Melt the Tin, and cast in some Quick-silver, remove it from the fire, and put it into a glass Retort, with a large round belly, and a very long neck, heat it red hot in the fire, till the Mercury sublimes and the Tin remains at bottom; do this three or four times. The same may be done by calcining of it three or four times, by which means it will sooner be red hot than melt.

XLVII. To take away the softness and creaking noise of Tin.

This is done by granulating of it often, and then reducing it again, and quenching it often in Vinegar and a Lixivium of Salt of Tartar. The creaking noise is taken away by melting it seven or eight several times and quenching it in Boys Urine, or else oyl of Walnuts.

XLVIII. To take away the deaf sound of Tin.

This is done by dissolving it in *Aqua fortis* over a gentle fire, till the water fly away: doing thus so long till it is all turned to a calx; which mixed with calx of silver, and reduced, performs the work.

XLIX. To make that Tin crack not.

Take Salt, Honey, of each alike, and mix them: melt your Tin and put it twelve or more times into it, then strain out the Tin, and it will purge and leave

cracking; put it into a crucible, which lute, and calcine it four and twenty hours, and it will be like calx of gold.

L. *To take away the brittleneſs of any Metal.*

Firſt calcine it and put it under dung; then do thus; when it is red hot at the fire, or melted, quench it often in *Aqua vitæ* often diſtilled; or uſe about them Roſin or Turpentine, or the oyl of it, or wax, ſuet, Euphorbium, Myrrh, artificial Borax: for if a metal be not malleable, unctuous bodies will oftentimes make them ſofter, if all theſe, or ſome of theſe be made up with ſome moiſture into little Cakes: and when the metal yields to the fire, by blowing with the bellows, we caſt in ſome of them and make them thick like mud, or clear, thenſet the Metal to the fire, that it may be red hot in burning coals, take it forth & quench it in them, & ſo let it remain half an hour to drink in. Or anoint the Metal with dogs greaſe, and melt it with it, for that will take away much of the brittleneſs of it, and make it ſo that it may be hammered and wrought.

LI. *To colour Metal like gold.*

Take Sal armoniack, White Vitriol, Stone Salt, Verdigrieſe, of each alike, in fine powder; lay it upon the Metal, then put it into the fire for an hour, take it out and quench it in Urine, and the Metal will have the colour of gold.

LII. *To make a kind of Counterfeited Silver of Tin.*

This is done by mingling Silver with Tin melted with Quick-ſilver, continuing it long in the fire, then being brittle, it is made tough, by keeping it in a gentle fire or under hot Embers (in a Crucible) for about twenty four hours.

LIII. *To Solder upon Silver, Braſs or Iron.*

Take Silver five peny weight, Braſs four peny weight, melt

melt them together for ſoft Solder, which runs ſooneſt.

Take Silver five peny weight, Copper three peny wight, melt them together for hard Solder.

Beat the Solder thin and lay it over the place to be Soldred, which muſt be firſt fitted, and bound together with Wire as occaſion requires: then take Borax in powder, and temper it like pap, and lay it upon the Solder, letting it dry, then cover it with quick coals and blow, and it will run immediately; then take it preſently out of the fire, and it is done.

Note 1. *If a thing is to be Soldred in two places, (which cannot be well done at one time) you muſt firſt Solder with the hard Solder, and then with the ſoft; for if it be firſt done with the ſoft, it will unſolder again before the other be ſoldred.* 2. *That if you would not have your Solder run about the piece to be Soldred, rub thoſe places over with Chalk.*

LIV. *To make the Silver tree of the Philoſophers.*

Take *Aqua fortis* four ounces, fine Silver one ounce, which diſſolve in it: then take *Aqua fortis* two ounces, in which diſſolve Quick-ſilver: mix theſe two Liquors together in a clear glaſs, with a pint of pure water; ſtop the glaſs cloſe, and after a day, you ſhall ſee a Tree to grow by little and little, which is wonderful and pleaſant to behold.

LV. *To make the Golden tree of the Philoſophers.*

Take oyl of Sand or Flints, oyl of Tartar *per deliquium*, of each alike, mix them well together, then diſſolve Sol in *Aqua Regis*, and evaporate the menſtruum, dry the Calx by the fire, but make it not too hot (for then it will loſe its growing quality) break it into little bits (not into powder) which bits put into the aforeſaid liquor, a fingers breadth one from another in a very clear glaſs, keep the liquor from the Air, and let

the Calx ſtand ſtill, and the bits of Calx will preſently begin to grow; firſt ſwell; then put forth one or two ſtems; then divers branches and twigs, ſo exactly, as you cannot but wonder to ſee.

Where note that *this growing is not imaginary but real.*

LVI. *To make the Steel tree of the Philoſophers.*

Diſſolve Steel in rectified ſpirit or oyl of Salt, ſo ſhall you have a green and ſweet ſolution, ſwelling like brimſtone; filter it, and abſtract all the moiſture with a gentle heat, and there will diſtil over a liquor, as ſweet as rain water (for ſteel by reaſon of its dryneſs detains the Corroſiveneſs of the ſpirit of Salt, which remaineth in the bottom, like a blood red maſs, and it is as hot on the tongue as fire:) diſſolve this blood red maſs in oyl of Flints or Sand, and you ſhall ſee it grow up in two or three hours like a tree with ſtem and branches.

If you prove this tree at the teſt, it will yield good gold, which it draweth from the oyl of Sand or Flints; the ſaid oyl being full of a pure golden Sulphur.

LVII. *To make oyl of Flints or Sand.*

Take of moſt pure Salt of Tartar in fine powder twenty ounces; ſmall Sand, Flints, pebbles, or Cryſtals in fine powder five ounces, mix them; put as much of this as will fill an Egg-ſhell into a crucible, ſet it in a furnace, and make it red hot, and preſently there will come over a thick and white ſpirit; take out the crucible whileſt it is hot, and that which is in it, like tranſparent glaſs, keep from the air; after beat it to powder, and lay in a moiſt place, and it will diſſolve into a thick, fat oyl, which is the oyl of Flints, Sand, pebbles or Cryſtals. *This oyl precipitateth metals, and makes the Calx there more heavy than oyl of Tartar doth; it is of a golden nature, and extracts colours from all Minerals; it is fixed in all fires, maketh fine*

Cryſtals,

Cryſtals, and Borax, and maturateth imperfect metals into Gold.

LVIII. *To melt Metals quickly.*

Take a Crucible, and make in it a lay or courſe of the powder of any metal, then lay upon it a lay of Sulphur, Salt-peter and Saw-duſt of each alike mixed tother, put a coal of fire to it, and the Metal will immediately be in a maſs.

LIX. Laſtly, He that ſhall obſerve the work and reaſon of the ſilver, golden and ſteel trees, may in like manner produce the like out of the Calx of other Metals.

CHAP. XXX.

Of the Inſtruments and Materials of Caſting.

I. HE that would learn to caſt, muſt be provided of all the chief Tools thereto belonging; which are 1. A *Trough*, 2. *Sand*, 3. A *Flask*, 4. *Skrew*, 5. *Tripoli*, 6. *The Medal or form*, 7. A *Furnace*, 8. *Crucibles*, 9. A *Pipe*. 10. *Tongs*, 11. *Two Oak plates*, 12. *Plegets of wool*, 13. *Oyl and Turpentine*, 14. A *Hares foot*, 15. *Bruſhes*.

II. The *Trough* is a four-ſquare thing about half a foot deep or ſomething more; and its uſe is to hold the Sand.

III. Of *Sand* there is various ſorts, the chief are Higate Sand, and Tripoli; the which to make fit for the work you muſt order thus.

If it is Higate Sand, you muſt finely ſift it; if Tripoli, you muſt firſt beat it fine, then ſift it through a fine ſive:

To either of these fine sands you must put of pure fine Bole (an ounce to nine ounces) well beaten, dissolved in water, and lastly reduced into fine powder; which powders you must moderately moisten with this Magisterial water, viz. filterated Brine made of decripitated common Salt: or the same, mixed with Glair of Eggs.

IV. The *Flask* is a pair of Oval Irons, containing only sides to hold the Sand, which must be pressed hard thereinto: and a passage or mouth for the metal to run in at.

V. The Skrew is an Iron Press, between which the flask is put and prest, after that it is filled with Sand, and hath received the form or impression to be cast.

VI. *Tripoli* is that of which the second sort of Sand is made, which here ought to be calcined and beaten into impalpable powder, to strew over the sandy moulds; first that the sides of the flask may not cleave together when they are full; secondly that the thing cast may have the perfect form and impression, without the least scratch or blemish imaginable.

The *Medal* or form, is that which is to be impressed upon the Sand, whose likeness we would imitate.

VIII. The *Furnace* is that which contains the fire, where the Crucible is put, for the Metal to melt in which is generally melted with Charcoal.

IX. The *Crucibles* are calcining or melting pots, (commonly three-square) made so as they may endure the fire all over, in which the metal is to be melted.

X. The *Pipe* is a hollow Reed, or piece of Tin, to blow coals and filth out of the Crucible.

XI. The *Tongs* are a crooked Instrument to take coals out of the crucible with, as also to stir and repair the fire; and to take the pot out of the furnace when you go to Cast.

XII. The

XII. The *two Oak plates* are to be ſmooth, and to be put between the flask and the ſides of the skrew, on each ſide.

XIII. *Pledgets of wool* are to be put between the Oak plates and the ſand to fill up empty ſpaces if there be any.

XIV. The *Oyl and Turpentine* is to wet ſome paper or cotton threads, which muſt be ſet on fire, to ſmoak the Impreſſion or Mould (being dry) that the metal may run the better.

XV. The *Hares foot* is to wipe the hollow places in the Mould, if they ſhould be too much filled with ſmoak.

XVI. The *Bruſhes* ought to be two, to wit one with thick bar Wire ſtrings; another with Hogs Briſtles, wherewith the work (both before and after caſting) ought to be rubbed and cleanſed.

CHAP. XXXI.

The Way and Manner of Caſting.

I. WAſh the Medal in Vinegar, in which put ſome Salt and Straw aſhes; and rub it well with the aforeſaid hair bruſh, then waſh it with water, and dry it well.

II. Place the female part of the flask upon one of the Oak plates; ſo that the middle part, *viz.* that which is joined to the other, may lie downwards.

III. Then put the cleanſed Medal in the flask upon the Oak plate, in a right line to the mouth of the flask: and if there be two, let them be placed ſo, that there may be a place left in the middle for the melted metal to run in at.

IV. Then

IV. Then take of the aforeſaid earth or ſand prepared, (that is, ſo much moiſtned with the Magiſterial water, that being cruſhed between the hands or fingers, it will not ſtick but like dry flower, and will ſtand with the print of the hand cloſed together) and preſs it on well in the flask upon the Medal with the fleſhy part of your fingers or hand; then with a rule ſtrike off all the ſuperfluous ſand that ſticks about the flask.

V. This done, the plegets of wool, or a woolen cloth, muſt be laid upon it, and then the other Oak plate, and then turned up with both hands, the plates being both held cloſe.

VI. Then taking off the upper plate; put upon it the male part of the flask, which fill with ſand in like manner (the Medal being now between) preſſing it down as before, and then with a ruler ſtriking away the ſuperfluous ſand.

VII. Upon which lay a woolen cloth, and gently lift off the top, or upper part of the flask, ſo that the medal may be taken forth.

VIII. All things being thus done with a knife (or ſome ſuch like) cut the paſſage for the metal, which let be a little dried: then,

IX. Either ſtrew over the ſide of the impreſſion (now taken off) with a calcined Tripoli ground impalpable; applying it upon the female flask again; turn the female flask uppermoſt, which take off, and ſtrew it in like manner, with the calcined Tripoli, and putting them together again, preſs them ſo hard, as that the fine Tripoli may receive the moſt perfect impreſſion of the Medal, which then take out, by ſeparating the ſides of the flask, and gently ſhaking that part which holds it, till it falls out:

X. Or with Cotton wet in Oyl and Turpentine and ſet on fire let the Impreſſion be ſmoaked; and if any ſuper-

superfluous fume be taken, wipe it off with a Hares foot.

XI. Then join the sides of the flask together, putting them with the woolen cloaths between the Oaken plates, which put into the Press, and skrew them a little.

XII. Then the Metal being melted, put it into the mould being hot, which if it be Silver, or blanched Brass, or Copper, it will run well enough.

XIII. But if it runs not well, you may cast in about the hundred part of Mercury sublimate, and an eighth part of Antimony; for so it will not only run well, but also be a harder metal.

XIV. Lastly, the Medal being cooled, take it neatly out and keep it.

Where note 1. *That so long as the Impression or mould is not spoiled, you may still cast more* Medals *therein; but when it decays, you must perfectly renew the whole work as at first.* 2. *That you may blanch them with a pure whiteness by the ninth Section of the nine and twentieth Chapter of this Book; or thus, if they be of whitened Brass, Take Sal armoniack one ounce and an half, Salt-peter two ounces and a half, Leaf silver twenty four grains; mix them and evaporate them in a Luted crucible, having a hole in the cover, till all the moisture is gone; being cold beat all into fine powder; of which take one ounce, Salt, Alom, Tartar, of each one handful, fair water a sufficient quantity; mix and boil all in a glazed vessel, in which put the* Medals *boiling them till they are purely white: then rub them with the Tartar in the bottom very well, wash them in fair water and dry them.* 3. *That if the* Medals *be of Gold, or of a golden colour, you may heighten it with Verdigriese and Urine.*

CHAP.

CHAP. XXXII.

Of Glaſs and Precious Stones.

I. *To melt Cryſtal.*

Beat Cryſtal to bits, and put them into an Iron ſpoon, cover it and lute it well, and heat it in the fire till it is red hot, which quench in oyl of Tartar: this do ſo often, till they will eaſily beat to powder in a mortar, which will then eaſily melt.

This is of uſe to counterfeit Jewels with.

II. *To make a Cement for broken Glaſſes.*

Glair of Eggs mixed with Quick-lime will join broken pieces of Glaſs together, and all earthen pots, ſo as that they ſhall never be broken in the ſame place again.

Or thus, Take old liquid Varniſh, and join the pieces with; bind them together and dry them well in the Sun or in an Oven, and they will never unglew again: but put no hot liquor into them then.

Or thus, Take White-lead, Red-lead, Quick-lime, Gum ſandrack of each one ounce, mix all with glair of eight eggs.

Or thus, Take White-lead, bole, liquid varniſh as much as ſufficeth.

Or thus, Take White-lead, Lime, glair of Eggs, as much as ſufficeth.

Or thus, Take fine powder of glaſs, Quick-lime, Liquid varniſh, of each a ſufficient quantity.

Or thus, Take Quick-lime powdered, liquid varniſh, glair of Eggs, of each alike: grind them upon a ſtone: this is a ſtrong glew even for ſtones.

Or

Or thus, Take Calcined flints and egg-ſhells of each alike, and with whites of Eggs and gum tragacanth or diſſolution of Gum Sandrack make glew, this in few days will be as hard as ſtone.

Or thus, Take calcined flints two pound, Quick-lime four pound, Linſeed oyl ſo much as may temper the mixture, this is wonderful ſtrong: but with liquid varniſh it would be ſtronger.

Or thus, Take fiſh glew, and beat it thin, then ſoak it in water till it is like paſte, make rouls thereof which draw out thin: when you uſe it, diſſolve it in fair water over the fire, letting it ſeeth a while and ſcumming of it, and whileſt it is hot uſe it. This not only cements glaſs, but Tortoiſe ſhell and all other things.

III. *To make Glaſs green.*

Green glaſs is made of fern aſhes, becauſe it hath much of an alkaly ſalt. Cryſtal or Venice Glaſs is tinged green with Ore of Copper; or with the Calx of Copper five or ſix grains to an ounce.

IV. *To counterfeit a Diamond.*

Take a Saphyre of a faint colour, put into the middle of a crucible in quick Lime, and put it into a gentle fire, and heat it by degrees till it is red hot, keep it ſo for ſix or ſeven hours; let it ſtand in the crucible till it is cold, (leſt taking it out hot it ſhould break) ſo will it loſe all its colour, and be perfectly like a Diamond, ſo that no file will touch it: if the colour is not all vaniſhed at the firſt heating, you muſt heat it again till it is perfect.

V. *To prepare the Salts for counterfeit Gems.*

The Salts uſed in making counterfeit Gems, are chiefly two, the firſt is made of the herb Kali; the ſecond of Tartar; their preparations are according to the uſual way (but in Glaſs veſſels.)

VI. *To prepare the matter of which Gems are made.*

The

The matter is either Cryſtal or ſlint that is clear and white: put them into a crucible in a reverberatory heat (the crucible being covered) then take them out and caſt them into cold water, ſo will they crack and eaſily reduce to powder: of which powder take an equal quantity with Salt of Tartar (or Sal Alkali) to which mixture add what Colour you pleaſe, which muſt be either Metalline or Mineral: put them into a very ſtrong Crucible (filling it about half full) cover it cloſe, and melt all in a ſtrong fire till it become like glaſs.

Where note, in melting you muſt put an Iron rod into it, and take up ſome of it, and if it is free from bubbles, grains, or ſpecks, it is fuſed enough: if not, you muſt fuſe it till it is free.

VII. *To make a counterfeit Diamond of Cryſtal.*

Put Cryſtal in a crucible and ſet it in a glaſs furnace all night, and then bring it to fine powder, mix it with equal parts of Sal Tartari, digeſt all night in a vehement heat, but yet not to melt, then take them out, and put them into another veſſel which will ſtoutly endure the fire; let them ſtand melted two days and take out the maſs.

VIII. *To make a Chalcedon.*

Mingle with the powder of Cryſtal, a little calcined ſilver, and let it ſtand in fuſion twenty four hours.

IX. *To make counterfeit Pearls.*

Mix Calx of Luna and Egg-ſhells with leaf ſilver ground with our beſt varniſh, of which make paſte, and having bored them with a hogs briſtle, dry them in the Sun, or an Oven.

X. *To counterfeit a Ruby.*

Take Sal Alkaly four ounces, Cryſtal three ounces, Scales of Braſs half an ounce, leaf gold ſix grains, mix all, and melt them in a reverberatory.

XI. *To*

XI. *To counterfeit a Carbuncle.*

Mix Cryſtal with a little red Lead, putting it into a furnace for twenty four hours, then take it out, powder and ſearce it, to which add a little Calcined braſs; melt all again, and add a ſmall quantity of leaf gold, ſtirring it well three or four hours, and in a day and night it will be done.

XII. *An Artificial Amethyſt.*

Take Cryſtal one pound, Manganeſs one drachm, mix and melt them.

Or thus, Take Sal Alkaly three ounces, powder of Cryſtal four ounces, filings of Braſs half an ounce, melt all in a ſtrong fire.

XIII. *An Artificial Jacynth.*

Put Lead into a ſtrong crucible, and ſet it into a furnace, let it ſtand there about ſix weeks till it is like glaſs, and it will have the natural colour of a Jacynth not eaſily to be diſcerned.

XIV. *An Artificial Chryſolite.*

Mix with melted Cryſtal a ſixth part of ſcales of Iron, letting it ſtand in a vehement fire for three days. *Or thus*, to the mixture of the *Topaze* add a little Copper.

XV. *An Artificial Topaze.*

To Cryſtal one pound, add *Crocus Martis* two Drachms, Red Lead three ounces, firſt putting in the Lead, then the *Crocus*.

XVI. *Artificial Corals.*

Take the ſcrapings of Goats horns, beat them together, and infuſe them in a ſtrong *Lixivium* made of *Sal fraxini* for five days: then take it out and mingle it with Cinnaber diſſolved in water; ſet it to a gentle fire that it may grow thick; make it into what form you pleaſe, dry, and poliſh it. *Or thus*, Take Minii one ounce, Vermilion ground fine half an ounce,

Quick-

Quick-lime, and powder of Calcined flints, of each ſix ounces, a *Lixivium* of Quick-lime and Wine, enough to make it thick: add a little Salt, then make it into what form you pleaſe, and boil it in Linſeed oyl.

XVII. *An Artificial Emerald.*

Take Braſs (three days) Calcined in powder, which put again into the furnace with oyl and a weaker fire; let it ſtay there four days, adding a double quantity of fine ſand or powder of Cryſtal: after it is ſomething hard, keep it at a more gentle fire for twelve hours, and it will be a lovely, pleaſant and glorious green. *Or thus*, Take fine Cryſtal two ounces and an half, Sal Alkali two ounces, *flos æris* infuſed in Vinegar and ſtrained one ounce, *Sal Tartari* one ounce and half; mix and lute them into a crucible, and put all into a glaſs-makers furnace for twenty four hours, and it will be glorious indeed. *Or thus*, Take Cryſtal ten ounces, Crocus Martis, and Braſs twice calcined, of each one pound, mix and melt them, ſtirring them well with an Iron Rod.

XVIII. *An Artificial Saphyre.*

To melt Cryſtal put a little *Zaphora* (two Drachms to a pound of Cryſtal) then ſtir it continually from top to bottom with an Iron hook, till it is well mixed, keep it in the furnace three days and it is done: yet when it is well coloured, unleſs it be preſently removed from the fire, it will loſe its tincture again.

XIX. *Artificial Amber.*

Boil Turpentine in an earthen pot, with a little cotton (ſome add a little oyl) ſtirring it till it is as thick as paſte, then put it into what you will, and ſet it in the Sun eight days, and it will be clear and hard, of which you may make beads, haſts for knives, and the like.

XX. *Another way to counterfeit Amber.*

Take

Take ſixteen yolks of Eggs, beat them well with a ſpoon; Gum Arabick two ounces, Cherry-tree Gum an ounce, make the Gums into powder, and mix them well with the yolks of Eggs; let the Gums melt well, and put them into a pot well leaded, then ſet them ſix days in the Sun, and they will be hard, and ſhine like glaſs; and when you rub them, they will take up a wheat ſtraw, as other Amber doth.

XXI. *To make yellow Amber ſoft.*

Put yellow Amber into hot melted wax well ſcum'd and it will be ſoft, ſo that you may make things thereof in what form and faſhion you pleaſe.

XXII. *Another Artificial Amber.*

Take whites of eggs well beaten, put them into a veſſel with ſtrong white wine Vinegar, ſtop it cloſe, let it ſtand fourteen days, then dry it in the ſhade, and it will be like to Amber.

XXXIII. *Another Artificial Amber.*

Break whites of eggs with a ſponge, take off the froth, to the reſt put Saffron, put all into a glaſs cloſe ſtopped, or into a Copper or brazen veſſel, let it boil in a kettle of water, till it be hard; then take it out and ſhape it to your liking, lay it in the Sun and anoint it often with Linſeed oyl mixed with a little Saffron; or elſe being taken out of the Kettle, boil it in Linſeed-oyl.

XXIV. *To make white Enamel.*

Take Calx of Lead two ounces, Calx of Tin four ounces, make it into a body with Cryſtal twelve ounces, role it into round balls, and ſet it on a gentle fire for a night, ſtirring it about with an Iron rod, till it is melted, and it is done.

XXV. *The general preparations and proportions of Mineral Colours.*

Plates of *Copper* muſt be made red hot, & then quenched

in cold water; of which five or six grains mixed with Cryſtal and Sal Tartari of each half an ounce, and melted, will colour a Sea-green. *Iron* muſt be made into a Crocus in a reverberatory fire; of which eight or ten grains will tinge the ſaid ounce of mixture into a yellow or hyacinth colour. *Silver* is to be diſſolved in *Aqua fortis* and precipitated with oyl of ſtints, then dulcifyed with water and dryed; of this five or ſix grains to an ounce, gives a mixed colour. *Gold* muſt be diſſolved in *Aqua Regis*, and precipitated with liquor of ſtints, then ſweetned and dryed; of which five or ſix grains to one ounce gives a glorious Saphe-rine colour. *Gold* melted with Regulus Martis nitro-ſus five or ſix grains to one ounce, gives an incompara-ble Rubine colour. *Magneſia* in powder only ten or twelve grains to one ounce, makes an Amethyſt Colour. *Granata* in powder only ten or fifteen grains to one ounce, will tinge the maſs into a glorious Smaragdine Colour, not unlike to the natural.

XXVI. *Laſtly*, Common Copper *makes a Sea-green*: Copper of Iron a *Graſs-green*: Granats, a *Smaragdine*: Iron, *Yellow or Hyacinth*: Silver, *White, yellow, green and granat*: Gold, *a fair skie colour*: Wiſmut, *a common Blew*: Magneſia, *an Amethyſt colour*: Copper and Sil-ver, *an Amethyſt colour*: Copper and Iron, *a pale green*: Wiſmut and Magneſia, *a purple colour*: Silver and Ma-gneſia, *an Opal*; *and the like.*

XXVII. *To make Azure.*

Take Sal armoniack three ounces, Verdigrieſe ſix ounces, make them into powder, and put them into a glaſs with water of Tartar, ſo that it may be ſomewhat thick, ſtop the glaſs and digeſt in Sand in Horſe-dung for eight or ten days and it will be good azure.

XXVIII. *Another way to make good beyond-ſea Azure.*

Beat

Beat common azure with Vinegar, and anoint therewith thin plates of Silver, and put the ſame over a veſſel full of Urine, which ſet over hot aſhes and coals, moving and ſtirring it till it looks like good azure.

CHAP. XXXIII.

The Ways and Manner of Gilding.

I. *TO lay Gold on any thing.*

Take red Lead ground fine, temper it with Linſeed oyl: write with it and lay Leaf gold on it, let it dry, then poliſh it.

II. *To lay Gold on Glaſs.*

Take Chalk and red Lead of each alike, grind them together, and temper them with Linſeed oyl: lay it on, and when it is almoſt dry, lay leaf gold on it; let it dry, then poliſh it.

III. *To gild Iron with a water.*

Take Spring water three pound, Roch Alom three ounces, Roman Vitriol, Orpiment, one ounce, Verdigrieſe twenty four grains, Sal gem three ounces, boil all together, and when it begins to boil, put in Tartar and Bay ſalt of each half an ounce; continue the boiling a good while, then take it from the fire, ſtrike the Iron over therewith, dry it againſt the fire and burniſh it.

IV. *To lay Gold on Iron or other Metals.*

Take liquid Varniſh one pound, oyl of Linſeed and Turpentine, of each one ounce; mix them well together: ſtrike this over any metal, and afterwards lay on the gold or ſilver, and when it is dry poliſh it.

V. *To Gild Silver or Braſs with Gold water.*

Take Quick-ſilver two ounces, put it on the fire in a Crucible, and when it begins to ſmoak, put into it an Angel of fine Gold; then take it off immediately, for the Gold will be preſently diſſolved: then if it be too thin, ſtrain a part of the Quick-ſilver from it, through a piece of Fuſtian: this done, rub the Gold and Quick-ſilver upon Braſs or Silver, and it will cleave unto it, then put the ſaid Braſs or Silver upon quick coals till it begin to ſmoak, then take it from the fire, and ſcratch it with a hair bruſh; this do ſo long till all the Mercury is rubbed as clean off as may be, and the gold appear of a faint yellow: which colour heighten with Sal Armoniack, Bole and Verdigrieſe ground together and tempered with water.

Where note, that before you gild your Metal, you muſt boil it with Tartar in Beer or water, then ſcratch it with a wire Bruſh.

VI. *Another water to gild Iron, Steel, Knives, Swords and Armour with.*

Take Fire-ſtone in powder, put it into ſtrong red wine vinegar for twenty four hours, boil it in a glazed pot, adding more Vinegar as it evaporates, or boils away: into this water dip your Iron, Steel, &c. and it will be black; dry it, then poliſh it, and you will have a gold colour underneath.

VII. *Another water to gild Iron with.*

Take Salt-peter, Roch-alom burnt of each half an ounce; Sal-armoniack an ounce, all being in fine powder, boil with ſtrong Vinegar in a Copper veſſel; with which wet the Iron, &c. then lay on leaf Gold.

VIII. *Another water to gild Iron with.*

Take Roch-alom, and grind it with boys Urine, till it is well diſſolved, with which anoint the Iron, heat it red hot in a fire of wood coals, and it will be like Gold.

IX. *To*

IX. To gild Books.

Take Bole Armoniack four peny-weight, Sugar-candy one peny-weight, mix and grind them with glair of Eggs; then on a bound Book, (while in the preſs, after it hath been ſmeared with glair of Eggs, and is dried) ſmear the ſaid compoſition, let it dry, then rub it well and poliſh it: then with fair water wet the edges of the Book, and ſuddenly lay on the gold, preſſing it down with Cotton gently, this done let it dry, and then poliſh it exactly with a tooth.

X. Another way of Gilding Iron.

Take water three pound, Alom two ounces, Sal gem three ounces, Vitriol Roman, Orpiment of each one ounce, *flos Æris* twenty four grains; boil all with Tartar and Salt as at the third Section.

XI. To make Iron of the colour of Gold.

Take Linſeed oyl three ounces, Tartar two ounces, yolks of Eggs boiled hard and beaten two ounces, Aloes half an ounce, Saffron five grains, Turmerick two grains: boil all in an Earthen veſſel, and with the oyl anoint Iron, and it will look like Gold. *If there be not Linſeed oyl enough, you may put in more.*

XII. A Golden liquor to colour Iron, Wood, Glaſs, or bones with.

Take a new laid Egg, through a hole at one end take out the white, and fill up the Egg with Quick-ſilver two parts, Sal-armoniack finely powdred one part; mix them all together with a Wire or little ſtick: ſtop the hole with melted Wax, over which put an half Egg-ſhell: digeſt in horſe dung for a month, and it will be a fine golden coloured Liquor.

XIII. To gild Silk and Linnen.

Take Glew made of parchment, lay it on the Linnen, or Silk, &c. gently, that it may not ſink: then take Ceruſe, Bole and Verdigrieſe of each alike, mix

and grind them upon a Stone: then in a glazed veſſel mix it with varniſh, which let ſimper over a ſmall fire, then keep it for uſe.

XIV. Another of a pure gold colour.

Take juice of freſh Saffron, or (for want of it) Saffron ground, the beſt clear Orpiment of each alike: grind them with Goats gall or gall of a Pike (which is better) digeſt twenty eight days in horſe dung, and it is done.

XV. To gild on Wood or Stone.

Take Bole Armoniack, Oyl Ben, of each a ſufficient quantity; beat and grind them together: with this ſmear the wood or ſtone, and when it is almoſt dry, lay on the Leaf-gold, let it dry, then poliſh it.

XVI. To gild with Leaf-gold.

Take leaves of gold, and grind them with a few drops of honey, to which add a little gum-water, and it will be excellent to write or paint with.

XVII. To gild Iron or Steel.

Take Tartar one ounce, Vermilion three ounces, Bole armoniack, Aqua Vitæ of each two ounces, grind them together with Linſeed oyl, and put thereto *Lapis Calaminaris* the quantity of a haſle nut; and grind therewith in the end a few drops of Varniſh; take it off the Stone, ſtrain it through a linnen cloth (for it muſt be as thick as honey) then ſtrike it over Iron or Steel, and let it dry; then lay on your Silver or Gold, and burniſh it.

XVIII. To colour Tin or Copper of a golden Colour.

Take Linſeed oyl, ſet it on the fire, ſcum it; then put in Amber, Aloes hepatick, of each alike, ſtir them well together till it wax thick; then take it off, cover it cloſe, and ſet it in the earth three days: when you uſe it, ſtrike the Metal all over with it, with a pencil, let it dry, and it will be of a golden colour.

XIX. To

XIX. To gild any Metal.

Take ſtrong Aqua fortis, in which diſſolve fine Silver, to which put ſo much Tartar in fine powder, as will make it into paſte, with which rub any metal, and it will look like fine Silver.

XX. To gild ſo as it ſhall not out with any water.

Take Oker calcined, pumice ſtone of each alike, Tartar a little, beat them with Linſeed oyl, and five or ſix drops of Varniſh, ſtrain all through a Linnen cloth, with which you may Gild.

CHAP. XXXIV.

Of Paper, Parchment, and Leather.

I. *TO make paper waved like Marble.*

Take divers oyled colours, put them ſeveraly in drops upon water, and ſtir the water lightly: then wet the Paper (being of ſome thickneſs) with it, and it will be waved like Marble; dry it in the Sun.

II. *To write golden letters on Paper or Parchment.*

This may be done by the ninth, tenth, and twelvth Sections of the three and thirtieth Chapter of this Book: or write with Vermilion ground with Gum Armoniack, ground with glair of Eggs, and it will be like gold.

III. *To take out blots, or make black Letters vaniſh, in Paper or Parchment.*

This may be done with Alom water; or with *Aqua fortis* mixed with common water.

IV. *To make Silver letters in Paper or Parchment.*

Take Tin one ounce, Quick-ſilver two ounces, mix and melt them, and grind them with Gum water.

V. *To write with green Ink.*

Take Verdigrieſe, Litharge, Quick-ſilver, of each a ſufficient quantity, grind and mingle them with urine; and it will be a glorious green like an Emerald to write or paint with:

Or thus, Grind juice of Rue and Verdigrieſe with a little Saffron together; and when you would write with it mix it with Gum water: *Or thus*, Diſſolve Verdigrieſe in Vinegar, ſtrain it, then grind it with common water, and a little honey; dry it; then grind it again with gum water, and it is done.

VI. *To write on Paper or Parchment with blew Ink.*

Grind blew with honey, then temper it with Glair of Eggs or gum water made of Iſinglaſs.

VII. *To Dye Skins Blew.*

Take berries of Elder or Dwarf-elder, firſt boil them, then ſmear and waſh the Skins therewith, and wring them forth: then boil the berries as before, in the diſſolution of Alom water, and wet the Skins in the ſame water once or twice, dry them and they will be very Blew.

VIII. *To dye Skins into a reddiſh Colour.*

Firſt waſh the Skin in water and wring it well: then wet it with the ſolution of Tartar and Bay ſalt in fair water, and wring it again: to the former diſſolution add aſhes of Crab ſhells and rub the Skin very well therewith, then waſh with common water and wring them out: then waſh them with tincture of Madder, in the ſolution of Tartar, Alom, and the aforeſaid Aſhes; and after (if not red enough) with the Tincture of Brazil.

IX. *Another way to Dye them red.*

Waſh the Skins, and lay them in galls for two hours; wring them out, and dip them into a colour made with *Ligiſtrum*, Alom and Verdigrieſe in water: Laſtly, twice dye them with Brazil boiled with lye.

X. *Another*

X. Another way to Dye them Blew.

Take the beſt *Indico* and ſteep it in Urine a day, then boil it with Alom, and it will be good. Or, temper the *Indico* with red Wine, and waſh the Skins therewith.

XI. To dye Skins Purple.

Take Roch Alom, diſſolve it in warm water, wet the Skins therewith drying them again; then take raſped Brazil, boil it in water well, then let it cool; do thus thrice: this done rub the dye over the skins with your hand, which being drye poliſh.

XII. *To dye Skins of a ſad green.*

Take the filings of Iron and Sal armoniack of each, ſteep them in Urine till they be ſoft, with which beſmear the skin, being ſtretched out, drying it in the ſhade: the colour will penetrate and be green on both ſides.

XIII. To dye Skins of a pure sky colour.

For each skin take Indico an ounce, put it into boiling water, let it ſtand one night, then warm it a little, and with a bruſh pencil beſmear the skin twice over.

XIV. To dye skins of a pure yellow.

Take fine Aloes one ounce, Linſeed oyl two pound, diſſolve or melt them, then ſtrain it; beſmearing the skins therewith, being dry, varniſh them over.

XV. To dye Skins green.

Take Sap green, Alom water, of each a ſufficient quantity, mix and boil them a little: If you would have the colour darker, add a little *Indico.*

XVI. To dye Skins Yellow.

Infuſe Woold in Vinegar, in which boil a little Alom: *Or thus*, having dyed them Green by the fifteenth Section, dip them in decoction of Privit berries and Saffron and Alom water.

XVII. To dye them of an Orange Colour.

Boil Fuſtick berries in Alom water: but for a deep Orange, uſe Turmerick root.

XVIII. A

XVIII. A *Liquor to gild Skins, Metals, or Glass.*

Take Linseed Oyl three pound, boil it in a glazed vessel till it burns a feather being put into it; then put to it Pitch, Rozin, dry Varnish, or Gum Sandrach, of each eight ounces, Aloes Hepatica four ounces; put all in powder into the oyl, and stir them with a stick, the fire being a little encreased: if the Liquor is too clear or bright, you may add ounce or two more of Aloes Socratine, and diminish the Varnish, so the Liquor will be darker and more like Gold. Being boiled, take it, and strain it, and keep it in a Glass for use: which use with a pencil.

CHAP. XXXV.

Of Wood, Horns, and Bones.

I. *TO Dye Elder, Box, Mulberry-tree, Pear-tree, Nut-tree of the colour of Ebony.*

Steep the wood in Alom water three or four days, then boil it in Common Oyl, with a little Roman Vitriol and Sulphur.

Where note, the longer you boil the wood, the blacker it will be, but too long makes them brittle.

II. To Dye Bones green.

Boil the Bones in Alom water, then take them out, dry them and scrape them, then boil them in Lime water with a little Verdigriese.

III. To Dye Wood like Ebony, according to Glauber.

Distil an Aqua fortis of Salt-peter and Vitriol.

IV. To make Horns black.

Vitriol dissolved in Vinegar and spirit of Wine will make Horns black: so the Snow white Calx of Silver in fair water.

V. To

V. To make Bones white.

They are ſtrangely made white by boiling with water and Lime; continually ſcumming of it.

VI. To dye Bones green.

Take white Wine-vinegar a quart, filings of Copper, Verdigrieſe, of each three ounces, Rue bruiſed one handful; mix them, and put the Bones therein for fifteen days.

VII. To Dye Wood, Horn, or Bones red.

Firſt boil them in Alom water, then put them into tincture of Brazil in Alom water for two or three weeks: or into Tincture of Brazil in Milk.

VIII. To Dye them Blew.

Having firſt boiled them in Alom water, then put them into the Diſſolution of Indico in Urine.

To Dye them Green like Emeralds.

Take *Aqua fortis*. and put as much filings of Copper into it, as it will *diſſolve*; then put the Wood, Horns or Bones therein for a night.

X. To Dye Briſtles and Feathers.

Boil them in Alom water, and after, while they are warm, put them into Tincture of Saffron, if you would have them yellow: or juice of Elder berries, if blew: or in Tincture of Verdigrieſe, if green.

XI. To Dye an Azure Colour.

Take Roch Alom, filings of Braſs, of each two ounces, Fiſh glew half an ounce, Vinegar, or Fair water a pint, boil it to the Conſumption of the half.

XII. To ſoften Ivory and Bones.

Lay them twelve hours in *Aqua fortis*, then three days in the juice of Beets, and they will be tender, and you may make of them what you will: *To harden them again*, lay them in ſtrong White-wine Vinegar.

XIII. To make Horns ſoft.

Take Urine a Month old, Quick-lime one pound, calcined

calcined Tartar half a pound, Tartar crude, Salt, of each four ounces, mix and boil all together, then ſtrain it twice or thrice, in which put the horns for eight days, and they will be ſoft.

XIV. Another way to make them ſoft.

Take aſhes of which glaſs is made, Quick-lime of each a pound, water a ſufficient quantity, boil them till one third part is conſumed, then put a feather into it, if the feather peel it is ſodden enough, if not, boil it longer, then clarify it, and put it out, into which put filings of Horn for two days; anoint your hand with oyl, and work the horns as it were paſte, then make it into what faſhion you pleaſe.

XV. Another way to ſoften Horns.

Take juices of Marubium, Alexanders, Yarrow, Celandine and Radiſh roots, with ſtrong Vinegar, mix them, into which put Horns and digeſt ſeven days in horſe-dung, then work them as before.

XVI. To caſt Horns in a mould, like at Lead.

Make a Lixivium of Calcined Tartar and Quick-lime, into which put filings or ſcrapings of Horn, boil them well together, and they will be as it were pap, tinge it of the colour you would have it, and then you may caſt it in a mould, and make thereof what faſhioned things you pleaſe.

XVII. To make Ivory white.

If Ivory be yellow, ſpotted or coloured, lay it in Quick-lime, pour a little water over it, letting it lye twenty four hours, and it will be fair and white.

CHAP.

CHAP. XXXVI.

Of Dying Yarn, Linnen Cloth, and the like.

I. *TO Dye a ſad Brown.*

Firſt infuſe the matter to be dyed in a ſtrong tincture of Hermodacts: then in a bag put Saffron and aſhes, *ſtratum ſuper ſtratum*, upon which put water two parts mixed with Vinegar one part; ſtrain the water and Vinegar through hot, fifteen or ſixteen times: in this Lixiviate Tincture of Saffron put what you would dye, letting it lie a night, then take it out, and hang it up to dry without wringing, which do in like manner the ſecond and third times.

II. *To Dye a Blew Colour.*

Take *Ebulus* berries ripe and well dried, ſteep them in Vinegar twelve hours, then with your hands rub them, and ſtrain through a linnen cloth, putting thereto ſome bruiſed Verditer and Alom.

Note, if the Blew is to be clear, put more Verditer to it.

III. *Another excellent Blew Dye.*

Take Copper ſcales one ounce, Vinegar three ounces, Salt one Drachm; put all into a Copper veſſel; and when you would dye, put the ſaid matter into the tincture of Brazil.

IV. *Another excellent Blew Dye.*

Take calcined Tartar three pugils, unſlak'd Lime one pugil, make a Lixivium, and filtrate it; to twelve or fifteen quarts of the ſame water put Flanders blew one pound, and mix them well: ſet it to the fire, till you can ſcarcely endure your hand in it: then firſt boil what you would dye in Alom water, then dry it; afterwards

wards dip it in hot Lye twice or thrice; then put it into the Dye.

V. A *good red Dye.*

Take Brazil in powder, fine Vermilion, of each half an ounce, boil them in Rain water, with Alom one drachm, boil it till it is half consumed.

VI. *Another excellent good Red Dye.*

Take of the Lixivium of unslak'd Lime one pint, Brazil in powder one ounce, boil to the half; then put to it Alom half an ounce, keep it warm, but not to boil: then dip what you would dye, first in a Lixivium of Red wine Tartar, let it dry; then put it into the Dye.

VII. *Another very good Red.*

Take Rosset with gum Arabick, boil them a quarter of an hour, strain it: then first boil what you would dye, in Alom water two hours; after put it into the Dye.

VIII. *To make a fair Russet Dye.*

Take two quarts of water, Brazil one ounce, boil it to a quart; put to it a sufficient quantity of Granie and two drachms of Gum Arabick.

IX. A *good Purple Colour.*

Take Myrtle berries two pound, Alom, calcined Brass of each one ounce, water two quarts, mix them in a Brass kettle, and boil half an hour, then strain it.

X. *A Yellow Colour.*

Take berries of purging Thorn, gathered about Lammas day, bruise them, adding a little Alom in powder; then keep all in a Brass vessel.

XI. *Another good Yellow.*

Put Alom in powder to the Tincture of Saffron in Vinegar.

XII. *A very good Green Colour.*

Take

Take Sap green, bruiſe it, put water to it, then add a little Alom, mix and infuſe for two or three days.

XIII. *To take out Spots.*

Waſh the ſpots with oyl of Tartar *per Deliquium*, two or three times and they will vaniſh, then waſh with water. Spirit of Wine to waſh with is excellent in this caſe. If they be Ink ſpots, juice of Lemmons or Spirit of Salt is incomparable, waſhing often and drying it: ſo alſo Caſtle Soap and Vinegar.

CHAP. XXXVII.

Of the Dying of Stuffs, Cloaths and Silks.

I. *To make a ſubſtantial blew Dye.*

Take Woad, one pound, and mix it with four pound of boiling water: Infuſe it twenty four hours; then die with it all white colours.

II. *To make a firm black Dye.*

Firſt Wad it with the former Blew: then take of Galls one pound; water ſixty pound; Vitriol three pounds: firſt boil the Galls and water with the Stuff or Cloath, two hours: then put in the Coperas at a cooler heat for one hour: then take out the Cloath or Stuff and cool it, and put it in for another hour, boiling it: Laſtly take it out again, cool it, and put in once more.

III. *To make an excellent Yellow Dye.*

Take liquor or decoction of Wheat-bran (being very clear) ſixty pound: in which diſſolve three pound of Alom: then boil the ſtuff or cloath in it for two hours: after which take Wold two pounds, and boil it till you ſee the colour good.

IV. *To make a very good Green Dye.*

Firſt

First Dye the Cloth or Stuff Yellow by the third Section, then put it into the Blew Dye, in the first Section of this Chapter.

V. *To make a pure clear Red Dye.*

Take Liquor or Infusion of Wheat-bran (being strained and made very clear,) sixty pounds, Alom two pounds, Tartar one pound; mix and dissolve them, with which boil the Stuff or Cloath for two hours: take it then out, and boil it in fresh Wheat-bran liquor, sixty pounds; to which put Madder three pounds; perfect the colour at a moderate heat, without boiling.

VI. *To make a very pleasant Purple Dye.*

First Dye it Blew, by the first rule of this Chapter; then boil it in the former Red at the fifth rule hereof; Lastly finish it with a decoction of Brazil.

VII. *To Dye Crimson in Grain.*

First boil it in the Red at the fifth rule of this Chapter: then finish it in a strong tincture of Cochenele made in the Wheat-bran Liquor aforesaid.

VIII. *To make a Bow-dye or Scarlet Colour.*

Take water an hundred pounds; *Cremor Tartari* and *Aqua fortis* of each half a pound; parched pease in powder an hundred: boil all together with the stuff for two hours; this done, take new water an hundred pound weight; *Cremor Tartari* & *Aqua fortis* of each two ounces, in which boil the Stuff or Cloath for a quarter of an hour; then put in the Cochenele, and boil all for about half an hour, and it is done. Where note *that the vessels in which the Stuff and Liquors are boiled must be lined with Tin, else the Colour will be defective.* The same observe in Dying of Silks (in each colour) with this Caution, that you give them a much milder heat, and a longer time.

IX. The Bow-dyers know that dissolved Lime (that

is

is the ſolution of *Jupiter*) being put into a kettle to the Alom and Tartar makes the Cloath attract the Colour into it, ſo that none of the Cochenele is left; but is all drawn out of the water into the Cloath.

The Spirit of Nitre being uſed with Alom and Tartar, in the firſt boiling, makes a firm ground, ſo that they ſhall not ſpot nor loſe their colour by the Sun, Fire, Air, Vinegar, Wine, Urine or Salt-water.

To enumerate all the great variety of Dyes, or Colours; or offer at an eſſay to reduce them to a certain method, as it is a labour needleſs, ſo it is as altogether impoſſible, there being infinite Colours to be produced, for which (as yet) we have no certain, known or real name: And out of what we have already enumerated in this Chapter, the ingenious (if they pleaſe) ſhall find (by little practice and Experience) ſuch great variety to be apparent, that ſhould we expreſs the number though but in a very low or mean degree, we could not but be expoſed in cenſure to an Hyperbole even of the higheſt: Every of the aforegoing colours, will alone or ſingly, produce a great number of others, the firſt more deep or high; the latter, all of them paler than each other. And according to the variety of colours the matter is of, before it is put into the Dye, ſuch new variety alſo ſhall you have again when it comes out; not according to what the Colour naturally gives, but another clean contrary to what you (although an Artiſt) may expect. For if ſtrange colours be dipt into dyes not natural to them, they produce a forced colour of a new texture, ſuch as cannot poſſibly be preconceived by the mind of man, although long and continued experience might much help in that caſe. And if ſuch variety may be produced by any one of thoſe ſingle Colours; what number in reaſon might be the ultimate of any two or three or more of them being

complicate or compounded? Now if ſuch great numbers or varieties may be produced 1. by any one ſingle colour; 2. by being complicate; how ſhould we (without a certain and determinate limitation by denomination or name) ever order ſuch confuſed, unknown, various, and undeterminate ſpecies of things, in any pleaſant, intelligible method? Since therefore that the matter (as yet) appears not only hard, but alſo impoſſible, we ſhall commend what we have done to the Ingenuity of the Induſtrious; and deſire that Candor or favour from the experienced, with love to correct our Errors; which act or kindneſs will not only be a future obligation to the Author, but alſo enforce Poſterity to acknowledge the ſame.

FINIS *Libri Tertii.*

POLY-

POLYGRAPHICES

LIBER QUARTUS.

Containing the Original, Advancement and Perfection of the Art of Painting.

CHAP. I.

Of the Original of theſe Arts.

I. THe Original of the Art of *Painting* was taken from the forms of the things which appear; expreſſing the ſame (as *Iſidorus Peluſiota* ſaith) with colours, either hollow or ſwelling; dark or light; hard or ſoft; rough or ſmooth; new or old.

II. Among all other viſible things, Flowers yield the greateſt variety of Colours; which Painters (as the famous *Pauſias*) have attempted to expreſs; who was the firſt that aſſayed to bring this Art to ſomething of Perfection in that kind.

III. Amongſt things inviſible, as Thunder, Lightning, and the like; *Apelles* was the firſt undertaker: the conſideration of theſe almoſt impoſſibilities made *Theophylactus Simocatus* in his ſeven and thirtieth Epiſtle ſay; that *Painters undertake to expreſs ſuch things, as nature is not able to do.*

For as Maximus Tyrius *ſaith, you ſhall not find in haſt*

a body ſo accurately exact, as to compare it with the beauty of a Statue. And Proclus *ſaith, if you take a man brought forth by nature, and another made by the Art of Carving; that by nature ſhall not wholly ſeem ſtatelier; becauſe* Art *doth many things more exactly: to which* Ovid *aſſents, when he ſaith, that* Pygmalion *did carve the ſnow white Image of Ivory with ſuch a happy dexterity, that it was altogether impoſſible that ſuch a woman ſhould be born.*

IV. Now whereas Nature ſcarcely ever preſents any one thing perfect in beauty (in all its parts) leſt it ſhould be ſaid that ſhe had nothing more to diſtribute to others; ſo Artiſts of old choſe out many patterns of beauty, which were abſolutely perfect in ſome of their parts, that by deſigning each part after that pattern, which was perfect therein, they might at laſt preſent ſomething perfect in the whole.

Wherefore when Zeuxis *intended an exquiſite pattern of a moſt beautiful woman he ſought not for this perfection in one particular body; but choſe five of the moſt well-favoured-virgins; that he might find in them that perfect beauty, which (as* Lucian *ſaith) muſt of neceſſity be but one.*

V. And from this manner of Imitation ariſes the skill of deſigning; from whence ſpring the Arts of *Painting*, *Limning*, *Waſhing*, *Caſting*, and all others of that kind.

VI. This matter of Imitation was proſecuted in the chief things only;

For who ſhould learn to imitate all things in nature? the greater being attained, the leſs will follow of themſelves; if any ſhall attempt ſo great a burthen, two inconveniences, ſaith Quintilian, *will neceſſarily follow, to wit,* always to ſay too much, and yet never to ſay all.

VII. The former Imitation is of things ſeen with the

the eye: there is another, which is the *Idea* of things conceived in the mind, from the continual motion of the Imagination.

Wherefore as *Quintilian* ſaith (in the third Chapter of the tenth Book of his Inſtitutions of Oratory) "We ſhall do well to accuſtom our mind to ſuch a ſted-"faſt conſtancy of Conceiving, as to overcome all other "impediments, by the earneſtneſs of our intention: for "if we do altogether bend this ſame intention upon "things conceived, our mind ſhall never take notice of "any thing which the eyes ſee, or the ears hear.

VIII. Thoſe therefore which would profit much, muſt take care and pains, to furniſh their minds with all ſorts of uſeful *Images* and *Idea's*.

"This treaſury of the mind, ſaith *Caſſiodorus*, (Cap. "12. de Anima) is not over-loaden in haſt. If it be "once furniſhed, the Artiſt ſhall find upon any ſudden "occaſion all things neceſſary, ready at hand; whereas "thoſe which are unprovided, ſhall be to ſeek: it is "like to the Analytical furniture in *Algebra*, without "the knowledge of which no notable thing can be per-"formed.

IX. Although the imagination may be eaſily moved, yet this ſame excellency is not attained in an inſtant: without the ability of expreſſing the conceived Images, all the exerciſe of the Phancy is worth nothing.

X. The Art of Painting in its Infancy was ſo mean, that the firſt Artiſt was forc'd (as *Ælianus* ſaith *in the tenth Chapter of the tenth Book of his Hiſtory*) in Painting to write, This is an Ox, this is a Horſe, this a dog.

But as *Tully* ſaith (*in libro de claris oratoribus*) "there is nothing both invented and finiſhed at a time. And *Arnobius* (*in libro ſecundo adverſus Gentes*) ſaith, "the Arts are not together with our minds brought "forth out of the heavenly places; but are all found out

" here on earth, and in proceſs of time, ſoftned, for-
" ged, and beautified by a continual meditation: Our
" poor and needy life perceiving ſome caſual things
" to fall out proſperouſly, whileſt it doth imitate, at-
" tempt, try, ſlip, reform and change, hath out of the
" ſame aſſiduous reprehenſion, made up ſome ſmall
" ſciences of Arts, the which it hath afterwards by
" ſtudy brought to ſome perfection.

XI. The bare learning to imitate is not enough; it is requiſite, that ſince we are not firſt in invention, we ſhould rather ſtudy to out-goe, than to follow.

If it were altogether unlawful to add any thing to things formerly invented, or to find out better things, our continual labour (ſaith Quintilian*) would be good for nothing. It is certain that* Phydias *and* Apelles *have brought many things to light, which their predeceſſors knew nothing of.*

XII. It is not enough to do all things with the Compleatneſs of *Apelles*; but there is requiſite alſo, the ineſtimable grace of *Zeuxis*; the indefatigable diligence of *Protogenes*; the witty ſubtlety of *Timanthes*; and the ſtately magnificence of *Nicophanes.*

It is a very good way to have recourſe to the excellency of variety of great maſters, that ſomething out of the one, and ſomething out of the other, may be as ſo many Ornaments to adorn our works, and ſo many ſteps to lead us on to the door of perfection.

XIII. Without doubt then there is ſome perfection of Art to be attained to; and that it is as poſſible that we, or thou, or he, may aſwel attain it, as any body elſe; if we reſolve to ſtrive and take pains, without fainting, or fear of diſpair.

XIV. The Art of Painting (ſaith *Socrates*) is the reſemblance of viſible things; and therefore the Artiſt is to beware that he abuſes not the liberty of his imagination in the ſhapes of monſtrous and prodigious I-

mages

mages of things not known in nature; but as a true lover of Art, prefer a plain and honeſt work agreeing with nature, before any phantaſtical and conceited device.

XV. Art is but one only thing: yet there may be incomparable Artiſts, excellent in one and the ſame Art, which may almoſt infinitely differ one from another; yet all alike praiſe worthy.

"There is but one Art of Caſting, in which *Myron*, "*Polycletus*, *Lyſippus*, have been excellent, yet did "one very much differ from an other: and in Paint- "ing although *Zeuxis*, *Apelles*, *Aglaophon*, differ very "much, yet none of them ſeems to lack any thing of "Art. *Zeuxis* did ſurpaſs all other Artizans, in paint- "ing of womens bodies: *Apelles* had a certain inven- "tion and Grace, proper unto himſelf alone, to which "never any other Artificer attained: *Lyſippus* is moſt ex- "cellent in fine and ſubtle workmanſhip: *Polycletus* "made excellent ſtatues upon one Leg: *Samius* did ex- "cell in conceiving of Viſions and Phantaſies: *Diony- "ſius* in painting of men only: *Polygnatus* moſt rarely "expreſſed the affections and paſſions of man: *Antima- "chus* made noble women: *Nicias* excellent in "painting of women, but moſt excellent in four-footed "creatures, chiefly dogs: *Calamis* made Chariots "drawn with two or four horſes; the horſes were ſo "exact, that there was no place left for emulation: "*Euphranor* the firſt and moſt excellent in expreſſing "the dignity and marks of Heroical perſons: *Areſto- "demus* painted wreſtlers: *Serapion* was moſt excel- "lent in Scenes: *Pyreicus* (inferiour in the Art of "Painting to none) painted nothing but Coblers and "Barbers: *Ludio* the firſt and moſt excellent in painting "Landskips: *Apollodorus*, *Aſclepiodorus*, *Androbulus*, *A- "levas*, were the only Painters of Philoſophers, &c.

XVI. *Simonides* comparing Painting with Poeſie ſaith, that Picture is a ſilent Poeſie; and Poeſie is a ſpeaking Picture.

Upon the occaſion of thoſe words, *Plutarch* ſaith, "The things repreſented by Painters as if they were as "yet doing, are propounded by Orators as done al-"ready: Painters expreſs in colours and lines, what "Poets do in words; the one doth that with the Pen-"cil, which the other doth with the Pen. When *Latinus Pacatus* had made a full deſcription of the miſerable end of wicked *Maximus*, he calls upon all the Painters to aſſiſt him. Bring hither, bring hither, you pious Poets (ſaith he) the whole care and ſtudy of your tedious nights; ye Artificers alſo deſpiſe the vulgar Arguments of antient fables; theſe, theſe things deſerve better to be drawn by your cunning hands: let the market places and Temples be filled with ſuch ſpectacles; work them out in Ivory; let them live in colours; let them ſtand in Braſs; let them exceed the price of precious ſtones. It doth concern the ſecurity of all ages, that ſuch things might ſeem to have been done; if by chance any one filled with wicked deſires or purpoſes, might drink in Innocence by his eyes, when he ſhall ſee (the horrid and deplorable) monuments of theſe our times. And *Gregory Nyſſen*, upon the ſacrificing of *Iſaac*, ſaith, "I often "ſaw in a picture the Image of this fact, upon which I "could not look without tears, ſo lively did Art put "the hiſtory before my eyes.

XVII. It is reported that the *Grecians* were the firſt Painters, and that their colours were (in the infancy thereof) only black and white: But it appears more with reaſon and truth, that the invention thereof ſhould be aſcribed to the *Ægyptians*, who (before the invention of Letters) ſignified their Conceptions

by

by *Hieroglyphicks* of Figures, Cyphers, Characters, and Pictures of divers things, as birds, beasts, insects, fishes, trees, plants, &c. And by tradition transferred the same to their children.

"So they made the Falcon, to signifie diligence and "swiftness: the Bee, a King: its honey, mildness: "its sting, justice: a Serpent (tail in mouth) the revo- "lution of the year: the Eagle, envy: the earth, a la- "bouring beast, as an Ox: a Hare, hearing, &c.

XVIII. It appears then, that as the *Ægyptians* were the first inventors thereof; so the *Greeks* brought it (out of its rudeness) to proportion, and the *Romans* at last adorned it with Colours: the *Germans* following them, made their works more durable by painting in Oyl; of whom the *English*, *Dutch*, and *French* are become mitators.

XIX. About the time of *Philip* King of *Macedon*, this Art began to flourish; growing into great estimation in the days of *Alexander* and his successors: from thence, through all the series of times, even to this day, it hath received by degrees, such wonderful advancements, that it may now be said, it is arrived at perfection.

XX. Lastly, that from *Time*, *Form*, *Magnitude*, *Number*, *Proportion*, *Motion*, *Rest*, *Situation*, *Imagination*, *Similitude*, *Distance and Light*, in a single and complicate consideration, this Art hath its essence, or being; and at last had, by the help of industrious and unwearied minds, its Original production and manifestation.

"Light is that only thing, without which, all those "other things from which this Art springs, would be "useless; without which the Art it self cannot be. It "is (as *Sanderson* saith) the Heavens Off-spring; the "eldest daughter of God; *fiat lux*, the first days creation:

"it

" it twinkles in a Star; blazes in a Comet; dawns in a " Jewel; diſſembles in a Glow-worm; contracts it " ſelf in a ſpark; rages in a flame; is pale in a candle; " and dyes in a coal. By it the ſight hath being, and " the imagination life, which comprehends the univer- " ſality of all things without ſpace of place; the whole " Heavens in their vaſt and full extent, enter at once " through the Apple of the eye, without any ſtrait- " neſs of paſſage: the *Sight* is a ſenſe, which compre- " hends that, which no other ſenſe is capable of: it judg- " eth and diſtinguiſheth between two contraries in an " inſtant; it conſiders the excellency and beauty of e- " very object; the ſpangled Canopy of Heaven by " night; the wandering cloud by day; the wonder- " ful form of the rainbow; the glorious matutine ap- " pearance of *Phœbus*; his meridional exaltation; " the golden rays which ſurround him; the mutability " of his ſhadows; his Veſpertine ſetting; the lofty " tops of mountains; unacceſſible and ridgy rocks; " profound valleys; large plains, which ſeem to meet " Heaven; green trees and pleaſant groves; delightful " hills; ſweet and flowery meadows; pleaſant " ſtreams; ſpringing fountains; flowing rivers; ſtately " Cities; famous Towers; large bridges; magnificent " buildings; fruitful Orchards and Gardens; ſhapes of " living Creatures, from the Elephant to the Ant, from " the Eagle to the Wren, and from the Whale to the " Shrimp; the wonderful form of Inſects; the marching " of Armies; the beſieging and ſtorming of Gariſons; " the inſolencies of rude people; the flight of the di- " ſtreſſed; the deſolations and depopulations of King- " doms and Countries; the ſailing of Ships; terrible " Sea-fights; great beauty of Colours, together with " thouſands of other things; all which it digeſts, and " marſhals in ample order, that when occaſion may

" be

"be, it may exert its ſtore, for the benefit, advan-"tage, advancement, and perfection of Art.

CHAP. II.

Of a Picture in general.

I. IN every Picture there are always four principal conſiderations: to wit, 1. *Invenjion*, 2. *Proportion*, 3. *Colour*, *and* 4. *Life*.

II. *Invention* muſt be free, and flow from a general knowledge of Antiquities, Hiſtory, Poetical fictions, Geometrical concluſions, and Optical conſiderations; according to its Situation or Aſpect, either near or far off.

III. And this *Invention* muſt expreſs proper and fit things, agreeing to the Circumſtances of *Time*, *Place*, *Matter*, and *Perſon*; and having reſpect to the modes of habits belonging to the Country or People whether *Antient* or *Modern*.

IV. *Proportion*, *Analogy*, or *Symmetry* (which you pleaſe) in that which limits each part to its proper bigneſs, in reſpect to the whole:

Whatſoever differs from this receedes from beauty, and may be called Deformity.

V. This *Proportion* is called by Artiſts the deſigning lines; which are firſt drawn before the whole is painted.

Theſe proportions or lineal deſigns, draughts, and ſcorches, may be called Picture, which being well done, ſhew not only the ſhape, but alſo the intent: In lines only, we may draw the Proportion of a Black More, and ſuch as ſhall be like him; Now this Skill proceeds from the very higheſt principles of Art.

VI. *Colour*

VI. *Colour* is that which makes the Picture reſemble what we deſire to imitate; by mixing of various Colours together.

VII. In making any thing apparent, it is neceſſary to expreſs its oppoſite or contrary.

So light and ſhadows forward, ſet forth Paintings outwards, as if you might take hold of them with your hand: blackneſs makes things ſeem farther off, and is uſed in things hollow, as Caves, Wells, &c. the more deep, the more black.

VIII. Brightneſs exceeds light, ſparkling in ſplendor.

It is uſed in the Glory of Angels; twinkling of Gems, Armory, Gold and Silver veſſels, fires and flames.

IX. In Painting of a man, grace each limb with its proper and lively Colour; the black make ſincerely black; the white, pure, with redneſs intermixt. But to paint purely the exquiſite beauty of a woman, is never to be well done (except it be by a very ingenious Artiſt indeed) her rare complexion being ſcarcely poſſible to be imitated with Colours: *There is none really knows the exact mixture for ſuch a Countenance.*

X. Life or Motion is that from whence action or paſſion doth reſult, which in coloured pictures is ſeen with a lively force of Geſture and ſpirit.

To do this it is neceſſary that the Artiſt be well acquainted with the nature, manners, and behaviour of men and women, as in anger, ſadneſs, joy, earneſtneſs, idleneſs, love, envy, fear, hope, diſpair, &c. Every diſturbance of the mind alters the Countenance into ſeveral poſtures.

XI. The head caſt down ſhews humility; caſt back, arrogancy or ſcorn; hanging on the neck, languiſhing; ſtiff and ſturdy, moroſity of mind: the various poſtures of the head ſhew the paſſions; the Countenance the ſame; the eyes the like: and in a word, all the other

ther parts of the body contribute something to the expression of the said passions of the mind, as is easily to be observed in the life.

In excellent pieces you may at a view read the mind of the Artist in the formality of the Storie.

XII. Lastly, Be always sure first to conceive that in your thoughts, which you would express in your work; that your endeavours being assisted by an intellectual energie, or power of operation, may at length render your productions perfect.

CHAP. III.

Of the Choice of Copies, or Patterns.

I. HE that chuseth a Pattern, ought to see 1. that it be well designed: 2. that it be well coloured.

II. In the well designing, be sure that it be true in every part; and that the proportion of the figure be just and correspond to the life.

III. If the picture be a fiction, see that it be done boldly, not only to exceed the work (but also the possibility) of nature, as in *Centaurs*, *Satyrs*, *Syrens*, *Flying-horses*, *Sea-horses*, *Tritons*, *Nereides*, &c.

Alexander ab Alexandria *saith that* Theodore Gaza *caught one of these* Nereides *in* Greece, *and that in* Zealand, *another was taught to spin*: *these* Tritons *and* Nereides *are these which are called Maremaids, the Male and the Female.*

IV. Natural figures shew property, and are required to agree with the life: forced Figures express novelty, and are to be beautified by exorbitancies according

cording to the fancy of the Painter without limitation: novelty cauſes admiration, and admiration curioſity, a kind of delight and ſatisfaction to the mind.

Theſe things are not the products of ſtupid brains, nor are they contained within the perimitre of clouded and dull Conceptions.

V. In the well colouring, know that in obſcurity or darkneſs there is a kind of deepneſs; the ſight being ſweetly deceived *gradatim* in breaking the Colours, by inſenſible change from the more high to the more dull.

In the Rain-bow this mixture is perfect; the variety of Colours are throughly diſpers'd (like Atoms in the Sun-beams) among one another, to create its juſt appearance.

VI. See that the ſwellings of the work agree with the exactneſs of nature, and as the parts thereof require, without ſharpneſs in out-lines, or flatneſs within the body of the piece; as alſo that each hollowneſs exactly correſpond in due proportions.

VII. Laſtly, View preciſely the paſſions, as *Joy*, *Sorrow*, *Love*, *Hatred*, *Fear*, *Hope*, &c. and ſee that they correſpond with their proper poſtures: for a touch of the pencil may ſtrangely alter a paſſion to its juſt oppoſite or contrary, as from Mirth to Mourning, &c.

CHAP.

CHAP. IV.

Of the Diſpoſing of Pictures and Paintings.

I. *Antique* works, or *Groteſco*, may become a wall, the borders and freezes of other works; but if there be any draughts in figures of men and women to the life upon the wall, they will be beſt of black and white; or of one colour heightned: if they be naked, let them be as large as the place will afford; if of Marbles, Columns, Aquæducts, Arches, Ruines, Cataracts, let them be bold, high, and of large proportion.

II. Let the beſt pieces be placed to be ſeen with ſingle lights, for ſo the ſhadows fall natural, being always fitted to anſwer one light; and the more under or below the light the better, eſpecially in mens faces and large pieces.

III. Let the *Porch* or entrance into the houſe, be ſet out with *Ruſtick* figures, and things rural.

IV. Let the *Hall* be adorned with Shepherds, Peaſants, Milk-maids, Neat-heards, Flocks of Sheep and the like, in their reſpective places and proper attendants; as alſo Fouls, Fiſh, and the like.

V. Let the *Stair-caſe* be ſet off with ſome admirable monument or building, either new or ruinous, to be ſeen and obſerved at a view paſſing up: and let the *Ceiling* over the top-ſtair be put with figures fore-ſhortened looking downwards out of Clouds, with Garlands and Cornucopia's.

VI. Let *Landskips*, Hunting, Fiſhing, Fouling, Hiſtories and Antiquities be put in the Great *Chamber*.

VII. In

VII. In the *Dining-room* let be placed the pictures of the King and Queen; or their Coat of Arms; forbearing to put any other Pictures of the life, as not being worthy to be their Companions; unleſs at the lower end, two or three of the chief nobility, as attendants of their Royal perſons: for want hereof you may put in place, ſome few of the neareſt blood.

VIII. In the *inward or with-drawing chambers*, put other draughts of the life, of perſons of Honour, intimate or ſpecial friends, and acquaintance, or of Artiſts only.

IX. In *Banqueting-rooms*, put cheerful and merry Paintings, as of *Bacchus*, Centaures, Satyrs, Syrens, and the like, but forbearing all obſcene Pictures.

X. Hiſtories, grave ſtories, and the beſt works become *Galleries*; where any one may walk, and exerciſe their ſenſes, in viewing, examining, delighting, judging and cenſuring.

XI. In *Summer-houſes* and *Stone-walks*, put Caſtles, Churches, or ſome fair building: In *Tarraces*, put Boſcage, and wild works: Upon *Chimney-pieces*, put only Landskips, for they chiefly adorn.

XII. And in the *Bed-chamber*, put your own, your wives and childrens pictures; as only becoming the moſt private Room, and your Modeſty: leſt (if your wife be a beauty) ſome wanton and libidinous gueſt ſhould gaze too long on them, and commend the work for her ſake.

XIII. In hanging of your Pictures; if they hang high above reach, let them bend ſomewhat forward at the top; becauſe otherwiſe it is obſerved that the viſual beams of the Eye, extending to the top of the Picture, appear further off, than thoſe at the foot.

CHAP.

CHAP. V.

Of Painting in General.

I. THe Art of *Painting* (which is the imitation of nature) consists in three things, to wit, *Design*, *Proportion* and *Colour*; all which are expresst in three sorts of Painting, viz. *Landskip*, *History*, and *Life*.

II. *Landskip* or perspective, wonderfully respects freedom and liberty, to draw even what you please. *History* respects proportion and figure: *Life* respects colour: In each of which there is a necessary dependency of all the other.

III. The work of the Painter is to express the exact imitation of natural things; wherein you are to observe the excellencies and beauties of the piece, but to refuse its vices.

For a piece of Painting may in some part want Diligence, Boldness, Subtilety, Grace, Magnificence, &c. while it is sufficiently in other parts excellent; and therefore you are not so much to imitate Ornaments, as to express the inward power and strength.

IV. In *Imitation*, always be sure to follow the examples and patterns of the best masters; lest evil presidents beget in you an evil habit.

V. The *force* of *Imitation* resides in the fancy or imagination, where we conceive (what we have seen) the form or *Idæa* of that, or those things which we would represent in lines and colours.

VI. This *Fancy* or *Imagination* is strengthned, by lodging therein all variety of visible rarities; as 1. forms made by light and darkness; such as are to be seen in Summer in the clouds, near Sun-setting (which,

vaniſh before they can be imitated:) 2. Forms made by proximity or diſtance of place, ſuch as are Trees, Woods, Buildings, appearing perfect being near, or confuſed in their parts being far off: 3. Forms of dreams, of which (whether ſleeeping or waking) the fancy muſt be fully poſſeſt.

VII. Where *Deſign* is required; you muſt fancy every circumſtance of the matter in hand, that in an inſtant, with a nimble hand, you may depict the ſame with livelineſs and Grace.

Slow performance cauſes a perturbation in the fancy, cooling of the mind, and deſtruction of that paſſion which ſhould carry the work on: but quickneſs and diligence brings forth things even excellent indeed: Care, Induſtry and Exercise are the props, ſupporters and upholders of Art.

VIII. Be ſure you dwell not too long upon deſigning: alter not what is well, leſt for want of exquiſite judgement you make it worſe: and if in deſigning you want that ability to follow the quickneſs of fancy, ſubmit to a willing negligence; a careleſs operation adds ſometimes ſuch a ſingular grace, as by too much curioſity would have been totally loſt; then by reviewing what is done, make *a regular connexion of all the* Idæa's *conceived in your mind.*

IX. With *Apelles* amend thoſe things which others juſtly find fault with; the reprehenſions of an Artiſt are as demonſtrative rules of experience; and weigh every ones opinion for the advancement of Art.

X. Laſtly, be ſure your Piece be of a good *Deſign, Hiſtory, or Life*; that the parts be well *diſpoſed*; the Characters of Perſons, *proper*; the form *magnificent*; the colour *lively*; and the ſpirit *bold*: that it may appear to be the work of a nimble fancy, ready memory, clear judgment, and large experience.

CHAP.

CHAP. VI.

Of Colours.

I. *Oker* is a good colour, and much in uſe for ſhadows, in pictures of the life, both for hair and drapery: In Landskips it is uſed for Rocks and high wayes.

II. *Pink* the faireſt, with blew, makes the faſteſt greens for Landskip and Drapery.

Sap green and green biſe are good in their kind; but the firſt is ſo tranſparent and thin, the other of ſo courſe and groſs body, that in many things they will be uſeleſs, eſpecially where a beautiful green (made of Pink and biſe mixed with Indico) is required.

III. *Umber* is a greaſie foul colour; but being calcined and ground, it works ſharp and neat.

IV. *Spaniſh Brown* is exceeding courſe and full of gravel; being prepared, it is uſed for a mixture made of red lead mixt with a little Umber, which makes the ſame colour.

V. *Collens earth* or *Terra Lemnia*, it is uſed to cloſe up the laſt and deepeſt touches, in the ſhadows of pictures of the life, and in Landskips; uſe it when new ground.

VI. *Cherry-ſtone black*, is very good for drapery and black apparel: mixt with Indico, it is excellent for Sattin; it appears more beautiful or ſhining if mixed with a little white: if deepened with Ivory black, in hard reflexions, and ſtrong deep touches, it is wonderful fair.

VII. *Ivory black*, it ſerves for a deep black, but is not eaſie to work without it be well tempered with Sugar-candy, to prevent peeling.

VIII. *Red lead* well waſh'd, is a glorious colour, for thoſe peices which require an exquiſite redneſs.

IX. *Indian Lake*, is the deareſt and moſt beautiful of all reds; it is to be ground as white lead, and mixt with a little white Sugar-candy and fair water, till the Colour and Sugar-candy be throughly diſſolved, which being dry will lie very faſt, without danger of cracking or peeling.

CHAP. VII.

Of making Original Colours.

I. *To make White Lead.*

Put into an earthen pot ſeveral plates of fine lead, cover them with white-wine vinegar, covering the top of the pot cloſe with clay, bury it in a Cellar for ſeven or eight weeks, and you will have good white lead upon the plates, which wipe off.

II. *To make Verdigrieſe.*

This is made by hanging plates of Copper over the fumes of *Aqua fortis* or ſpirit of Nitre: or by dipping them in the ſame, or in Vinegar.

III. *To make an Emerald Colour.*

Take Verdigrieſe in fine powder, which temper with Varniſh, and lay it upon a ground of liquid ſilver burniſh'd, and you have a fair Emerald.

IV. *To make a Ruby Colour.*

Mix the ſame with Florence lake, and you ſhall have a very fair Ruby colour.

V. *To make a Saphyre Colour.*

The ſame, *viz.* Verdigrieſe mixt with *Ultramarin*, makes a glorious Saphyre.

VI. *To*

VI. *To make a Crimſon Velvet.*

Take Turnſoil and mix it with Indico lake (well ground with Gum and Sugar-candy) lay it full, and when it is wet, wipe away the colour with a dry penſil, where you would have the heightening of the Crimſon velvet appear, and the ſtronger reflections will be well expreſſed.

VII. *To make a ſilver black.*

Take fine Silver filings or plates, which diſſolve in ſpirit of Nitre or Aqua fortis, and evaporate to dryneſs, or precipitate with Oleo Sulphuris or Salt water, and you ſhall have a ſnow white precipitate, which mixt with water makes the beſt black in the world, to dye all manner of Hair, Horns, Bones, Wood, Metals, &c.

VIII. *To make a Murry or Amethyſt.*

It is made of Indian Lake ground with Gum Arabick water only.

IX. *To make a Red or Ruby for Limning.*

It is made of Indian lake (which breaks off a ſcarlet colour) ground with Gum water and Sugar-candy.

X. *To make Azure blew, or Saphyre.*

It is made of *Ultramarine* of *Venice* (which is beſt) the beſt blew ſmalt, or blew biſe, ground with Gum water only: you may make good ſhadowing blews of Indico, Flory and Litmoſs, all which need no waſhing, nor Litmoſs no grinding, but only infuſed in a Lixivium of Soap-aſhes.

XI. *To make a green or Emerald.*

It is made of Cedar green: in place whereof, take tripal to draw with: Pink is good alſo for Landskips, mixed with Biſe aſhes; as alſo with Maſticot and Ceruſe.

XII. *To make a yellow or Topaz.*

It is made of Maſticot which is the beſt, of which

there is divers ſorts, *viz.* deeper and paler: yellow Oker alſo for want of better may do. Shadow Maſticot with yellow oker; deepen it with Oker de rouſe.

XIII. *To make Ultramarine.*

Take the deepeſt coloured Lapis Lazuli (having few veins of Gold upon it) heat it red hot in a Crucible cloſe covered, then quench it in Urine, Vinegar or water, in a leaded earthen pot dry it well, then with a pair of pinſers nip off the hard, gray, and whitiſh part from it, and grind the remainder with honied water as fine as may be, then dry it for uſe. The honied water is made of water a quart, boiled with honey two ſpoonfuls.

CHAP. VIII.

Of Limning to the life in general.

I. LEt the table be prepared very exact by the fifth rule of the twenty third Chapter of the ſecond Book.

II. Let the ground be of fleſh colour, tempering it according to the complexion to be painted.

III. If it be a fair complexion, mix a good quantity of red and white Lead together ſomewhat thick.

IV. If ſwarthy or brown, mix with the former a little fine Maſticot or Engliſh Oker, or both, always obſerving that your ground be fairer than the complexion painted.

For fairneſs may be ſhadowed or darkened at pleaſure; but if it be ſad or dark, you can never heighten it, for in Limning the picture is alwayes wrought down to its exact colour.

V. Lay

V. Lay the ground upon the card or tablet, with a larger pencil than ordinary, free from ſpots, ſcratches of the pencil, or duſt, and as even as poſſible may be; and let the colour be rather thin and wateriſh than too thick, doing it very quick and nimbly with two or three daſhes of the pencil.

VI. This done prepare your ſhadows in order, by the ſeventh rule of the four and twentieth Chapter of the ſecond Book.

VII. Then draw the out-lines of the face with lake and white mingled together very fine; ſo that if you ſhould miſtake in your firſt draught, you may with a ſtrong ſtroke draw it true, the other line by reaſon of its faintneſs being no hinderance.

Theſe lines muſt be truly drawn, ſharp and neat, with the greateſt exactneſs imaginable.

VIII. Obſerve the moſt remarkable and deep ſhadows, to keep in memory when you go over them with more exactneſs; drawing out alſo (if you ſo pleaſe) the ſhape of that part of the body next adjoining to the face, *viz.* a little beneath the ſhoulders, with a ſtrong and dark colour, which in caſe of miſtake in proportion may eaſily be altered.

IX. The firſt ſitting is to dead colour the face: the ſecond ſitting is the exact colouring and obſervation of the ſeveral ſhadows, graces, beauties or deformities, as they are in nature: the third ſitting is in making ſmooth what was before rough and rude; clothing what was naked, and giving ſtrong and deepning touches to every reſpective ſhadow.

X. The dead colour is thus made.

Take of the aforeſaid ground (at the third or fourth Section of this Chapter) and mix it with fine red lead, tempering it exactly to a dead colour of the cheeks and lips, having a great care, that you make it not too deep; which if light, you may do at pleaſure.

XI. The face is first begun to be coloured in the reds of the cheeks and lips, and somewhat strongly in the bottom of the chin (if beardless) also over, under, and about the eyes with a faint redness.

XII. The ear is most commonly reddish, as also sometimes the roots of the hair.

XIII. The ground being wash'd over with this reddish or dead colour, let the shadows be as well bold and strong, as exact and curious.

A good picture, if but dead coloured only, and seeming near hand very rough, uneven and unpleasant, yet being boldly and strongly done and shadowed, will appear very smooth, delicate, and neat if but viewed at a distance from the eye. Therefore curiosity and neatness of Colour, is not so much to be regarded, as bold, lofty, and strong expressing what is seen in the life.

XIV. The next thing to be done is the use of the faint blews, about the corners and balls of the eyes and temples, which you must work out exceeding sweetly, and faint by degrees.

XV. Alwayes be sure to make the hard shadows fall in the dark side of the face, under the nose, chin, and eyebrows, as the light falls, with somewhat strong touches.

XVI. The light shadows being done and smoothed, work the hair into such forms, curlings, and dispositions as best adorn the piece.

First draw it with colours, neatly and to the life; then wash it roughly as the rest; and the next time perfect it: filling up the empty places with colour, and the partings thereof with blew.

XVII. And ever remember, when you would have your colours or shadows deep, strong, and bold; that you do them by degrees, beginning faintly, and then encreasing the same.

XVIII. First

XVIII. Firſt, uſe the former colours in the ſame places again, driving and ſweetning them into one another, that no part may look uneven, or with an edge, or patch of colour, but altogether equally mixt and diſperſed, lying ſoft and ſmooth, like ſmoak or vapours.

XIX. Secondly, This work being done for an hour or two, lay the ground for behind the picture of blew, or crimſon, like to a ſattin or velvet curtain.

XX. If blew, let it be done with Biſe well tempered in a ſhell: Firſt draw the out lines with the ſame colour, with a ſmall pencil: then with a thin and wateriſh blew waſh over the whole ground with a larger pencil: laſtly, with thicker colour cover the ſame which you before waſh'd, ſwiftly, that it dry not before all be covered, ſo will it lye ſmooth and even.

XXI. If Crimſon, work with Indian lake, in thoſe places where the ſtrong lights, and high reflexions fall: let the light be done with thin and wateriſh lake; the deepning and ſtrong ſhadows, cloſe by the light with thicker colour: this done, the picture will be much changed; the beauty of theſe grounds will much darken and dead it.

XXII. Let the apparel with ſuitable colours be done only flat with heightning or deepning; and then go over the face again, reducing the ſhadows to ſmoothneſs and neatneſs with a ſharp and curious pencil: drawing the eyes; the lines of the eye-lids; redneſs of the noſtrils; ſhadow of the ears; deepneſs of the eye-brows, and thoſe other more remarkable marks of the face: *ſo ſweetning the out-lines of the face (by darkning the ground, above from the light ſide, and below on the dark ſide) that when the work is done, the ground may ſtand as if were at a diſtance from the face behind; and the face may ſeem to ſtand off forward from the ground.*

XXIII. Then

XXIII. Then go over the hair, making it light or deep by the life: and in Apparel make the ſeveral folds and ſhadows, and what elſe is to be imitated, as it is in the life it ſelf; lightning the lines with the pureſt white, a little yellow, and ſome blew; and deepning with Ivory black; and heightning with black mixed with a little lake or Indico.

XXIV. This done, and the perſon gone, your work being yet rough, by your ſelf poliſh it, and ſtrive to make it ſmooth and pleaſant, filling up the empty places, and ſweetning the ſhadows, which yet lye uneven and hard.

XXV. The Apparel, hair, and ground being finiſhed, now give ſtrong touches for the rounding of the face; and obſerve whatſoever may conduce to likeneſs and reſemblance, as moles, ſmilings, or glancings of the eyes, motion of the mouth, &c. for which purpoſe, you may find an occaſion of diſcourſe, or cauſe the perſon to be in action, and to look merrily and chearfully.

XXVI. Laſtly conclude, that the eye gives the life; the noſe the favour; the mouth the likeneſs; and the chin the grace.

XXVII. In fair coloured drapery, if the lightning be done with fine ſhell gold, it will add a moſt wonderful luſtre, and be a ſingular ornament to your work; and if this gold be mixt with the very ground it ſelf, the apparel will appear much the fairer.

CHAP.

CHAP. IX.

Of Limning Landskip.

I. TO *make the Tablet for Landskip.*

Take a piece of Vellom, and ſhare it thin upon a frame, faſtning it with paſt or glew, and paſting it upon a board; and this manner of tablets are altogether uſed in Italy *for Landskip, and Hiſtory.*

II. If you draw a Land-skip from the life, take your ſtation from the riſe of ground, or top of an hill, where you ſhall have a large Horizon, marking your tablet into three diviſions downwards, from the top to the bottom: then your face being directly oppoſed to the midſt of the finitor, keeping your body fixed, depict what is directly before your eyes, upon your tablet, on your middle diviſion, then turning your head (not your body) to the right hand, depict what is there to be ſeen: adjoining it to the former. *In like manner doing by that which is to be ſeen on the left hand, your Landskip will be compleated.*

III. Make every thing exact, not only in reſpect of diſtance, proportion and colour; but alſo in reſpect of form, as if there be *Hills*, *Dales*, *Rocks*, *Mountains*, *Cataracts*, *Ruines*, *Aquæducts*, *Towns*, *Cities*, *Caſtles*, *Fortifications*, *or whatſoever elſe may preſent it ſelf to view*; making always a fair sky, to be ſeen afar off; letting your light always deſcend from the left hand to the right.

IV. In beginning your work, firſt begin with a large sky; and if there be any ſhining or reflexion of the Sun, beware you mix no red lead in the purple of the sky, or clouds, but only with lake and white: the yellow

yellow and whitiſh beams of Sol work with Maſticot and white.

V. Then with a freſh or clean pencil finiſh the blewiſh sky, and clouds, with ſmalt only: at the firſt working, dead all the work over, with colours ſuitable to the Air, green meadows, trees, and ground, laying them ſomewhat ſmooth, not very curiouſly, but ſlightly and haſtily; make a large sky, which work down in the Horizon, faintly, but fair; and drawing nearer to the earth, let the remote mountains appear ſweet and miſty, almoſt indiſtinguiſhable, joining with the clouds, and as it were loſt in the Air.

VI. The next ground colour downwards muſt encreaſe in magnitude of reaſon, as nearer the eyes, ſomewhat blewiſh or Sea-green: but drawing towards the firſt ground, let them decline into a reddiſh or popinjay green: the laſt ground colour, muſt be neareſt the colour of the earth, *viz.* a dark yellow, brown and green; with which, or ſome colour near it, you muſt make your firſt trees; making them, as they come near in diſtance, to encreaſe proportionably in colour and magnitude, with great judgment: the leaves flowing and falling one with another, ſome apparent, others loſt in ſhadow.

VII. Let your Landskip lye low, and as it were under the eye (which is moſt graceful and natural) with a large and full skie not riſing high, and lifting it ſelf into the top of the piece, as ſome have done.

VIII. Be ſure to make your ſhadows fall all one way, *viz.* to make light againſt darkneſs, and darkneſs againſt light; thereby extending the proſpect, and making it to ſhew as afar off; by loſing its force and vigour, by the remoteneſs from the eye.

IX. In touching the trees, boughs, and branches, put all the dark ſhadows firſt, raiſing the lighter leaves above

above the darker, by adding Maſticot to the dark green, which may be made with Biſe, Pink and Indico: the uppermoſt of all, expreſt laſt of all, by lightly touching the exteriour edges of ſome of the former leaves, with a little green, Maſticot, and white: the darkeſt ſhadows you may ſet off with ſap green and Indico.

X. Trees and their leaves, Rivers, and Mountains far diſtant, you muſt ſtrive to expreſs with a certain real ſoftneſs and delicateneſs: in making Cataracts, great falls of water, and rocks, you muſt firſt lay a full ground near the colour, then with a ſtronger in the dark places, and ſlight heightning in the light; remarking all diſproportions, cracks, ruptures and various repreſentations of infinitely differing matters; the manner whereof is abundantly expreſt, in almoſt every Land-skip.

CHAP. X.

Of the various Forms or Degrees of Colouring.

I. THere are four various forms or degrees of colouring, *viz.* 1. Of *Infants*, or Children: 2. Of *Virgins* or fair Women: 3. *Naked* bodies: 5. *Old or aged* bodies.

II. *Infants or young children* are to be painted of a ſoft and delicate complexion; the skin and ears of a ruddy and pleaſant colour, almoſt tranſparent; which may be done with white lead, lake, and a little red lead; ſhadowing it thin, faint, and ſoft; letting the Cheeks,

Cheeks, Lips, Chin, Fingers, Knees and Toes be more ruddy than other parts; making all their Linnen very fine, thin, and transparent, or perspicuous, with strong touches in the thickest folds.

III. *Virgins and fair Women* are as curiously to be expres's'd as the former, but their Muscles are to be more apparent, their shape more perfect; and their shadows to be of a whitish yellow, blewish, and in some places almost purple; but the most perfect and exquisite direction is the life, which ought rather to be followed than any thing delivered by rule.

IV. *Naked bodyes* are to be painted strong, lively, and accurate; exactly matching the respective pairs of Muscles and Nerves, fixing each Artery in its due and proper place, giving each limb its proper motion form and scituation, with its true and natural colour; all which to do well may be the study and practice of almost ones whole life.

V. *Old or aged Bodies* ought to be eminent for exact and curious shadows, which may be made of Pink, lake, and Ivory black, which make notable shadows, in appearance like the wrinkles and furrows of the face and hand in extreme old age: let the eyes be dark, the aspect melancholy, the hair white (or else the pate bald) and all the remarks of Antiquity or age be very apparent and formidable.

VI. But notwithstanding all the aforegoing rules, the posture or form of standing, and being either of the whole body, or any of its parts, ought diligently to be observed, that the life may be imitated, in which, it only lyes in the breast and judgment of the Painter to set it off with such various colours, as may best befit the respective complexion and accidental shadows of each accidental position or posture, which are sometimes more pale, sometimes more ruddy; sometimes more faint, sometimes more lively.

CHAP.

CHAP. XI.

Of Freſcoe, or Painting of Walls.

I. IN Painting upon Walls, to make it endure the weather, you muſt grind your colours with Lime water, Milk, or Whey, mixt in ſize colouring pots.

II. The paſte or plaiſter muſt be made of well waſh'd lime, mixt with fine powder of old rubbiſh ſtones: the lime muſt be ſo often waſh'd, till all its ſalt is abſtracted; and all your work muſt be done, in clear and dry weather.

III. To make the work endure, ſtrike into the wall ſtumps of headed nails, about five or ſix inches aſunder, and by this means you may preſerve the plaiſter from peeling.

IV. Then with this paſte, plaiſter the wall, a pretty thickneſs, letting it dry: being dry, plaiſter it over again, about the thickneſs of half a barley corn, very fine and ſmooth, then your colours being ready prepared, work this laſt plaiſtering over, whileſt it is wet, ſo will your Painting unite and join faſt to the plaiſter, and dry together as a perfect compoſt.

V. In painting be nimble and free, let your work be bold and ſtrong, but be ſure to be exact, for there can be no alteration after the firſt painting; and therefore heighten your paint enough at firſt, you may deepen at pleaſure.

VI. All earthy colours are beſt, as the Okers, Spaniſh white, Spaniſh brown, Terræ Vert, and the like; mineral colours are naught.

VII. Laſtly, let your pencils and bruſhes be long and ſoft, otherwiſe your work will not be ſmooth; let your

your colours be full, and flow freely from the pencil or brush; and let your design be perfect at first; for in this, there is no after alteration to be made.

CHAP. XII.

How the Antients depicted their Gods, and first of Saturn.

"IN *Chap.* 18. and 19. *lib.* 1. and *chap.* 12. and 13. "*lib.* 3: we have something concisely handled this "matter; but because we have been there exceeding "brief, & that what we have there delivered is too strict "for ordinary use or practice, being indeed only the pre- "parative or foundation for a larger work; we intend "here in this fourth part to prosecute the same, in such "sort, as to comprehend the various ways of the antients "in depicting their Idols, according to the customs of "those several nations, where they were adored and "worshiped, and that from most of the ancient, chief- "est and best approved Authors now extant.

I. The ancient *Romans* figured *Saturn* like an old man, with a Sythe or hook in his hand, by some signifying time, as his name *Chronos* also intimates.

II. They also figured him in the shape of a very aged man, as one who began with the beginning of the world, holding in his hand a child, which by piece meals he seems greedily to devour.

"By this is signified the revenge he took, for being "expulsed Heaven by his own children; of which "those which escaped his fury, were only four, *Jupiter*, "*Juno*, *Pluto*, and *Neptune*; by which is shadowed "forth the four Elements, Fire, Air, Earth, and Water, which

" which are not periſhable by the all cutting ſickle of " devouring time.

III. *Martianus Capella* depicts him an old man, holding in his right hand a Serpent, with the end of its tail in its mouth, turning round with a very ſlow pace, his temples girt with a green wreath, and the hair of his head and beard milk white.

" The wreath on his head ſhews the Spring time; his " ſnowy hair and beard, the approach of churliſh win- " ter; the ſlowneſs of the Serpents motion, the ſlug- " giſh revolution of that Planet.

IV. *Macrobius* deſcribes him with a Lions head, a Dogs head, and a Wolfs head.

" By the Lions head is ſignified the time preſent, " (which is alwayes ſtrongeſt, for that which is, muſt " needs be more powerful than that which is not:) " by the dogs head, the time to come, (which always " fawns on us, and by whoſe alluring delights we are " drawn on to vain and uncertain hopes:) and by the " wolfs head, time paſt, (which greedily devoureth " whatever it finds, leaving no memory thereof be- " hind.

V. *Macrobius* alſo ſaith that among the reſt of his deſcriptions, his feet are tyed together with threds of Wool.

" By which is ſhewed, that God does nothing in haſte, " nor ſpeedily caſtigates the iniquities of man, but pro- " ceeds ſlowly and unwillingly, to give them time and " leiſure to amend.

VI. *Euſebius* ſaith, that *Aſtarte* (the daughter of *Cœlum*, wife and ſiſter of *Saturn*) did place alſo upon his head two wings, demonſtrating by the one, the excellency and perfection of the mind; by the other, the force of ſence and underſtanding.

" The Platonicks underſtand by *Saturn* the mind, and

" its inward contemplation of things cœleſtial, and " therefore called the time in which he lived, the golden " Age, it being replete with quietneſs, concord, and true " content.

CHAP. XIII.

How the Antients depicted Jupiter.

I. *Orpheus* deſcribes him with golden locks, having on his temples peeping forth, two golden horns, his eyes ſhining, his breaſt large and fair, having on his ſhoulders, wings.

" By the golden locks is ſignified the Firmament, " and its glorious army of tralucent Stars: by his " two horns, the *Eaſt* and *Weſt*: by his eyes, the Sun " and Moon: by his breaſt, the ſpacious ambulation of " the air; and by his wings the fury of the winds.

II. *Porphyrius* and *Suida* depicture the Image of *Jupiter* ſitting upon a firm and immoveable ſeat; the upper parts naked and uncloathed, the lower parts covered and inveſted; in his left hand a Scepter; in his right hand a great Eagle, joined with the figure of *Victoria*.

" This Image was erected in *Piræus*, a ſtately and " magnificent gate of *Athens*: by the ſeat is ſhewed the " permanency of Gods power: the naked parts ſhew " that the compaſſion of the Divine power is always " manifeſt to thoſe of an underſtanding Spirit: the low- " er parts covered, ſhew that while we wallow in the " world, and as it were rock'd aſleep with the illece- " brous blandiſhments thereof, that the divine know- " ledge is hid and obſcured from us: by the Scepter is

" ſignified

" ſignified his rule over all things: by the Eagle and " *Victoria* how all things ſtand in vaſſalage and ſubje- " ction to the all commanding power.

III. *Martianus* depictures him with a regal crown, adorned with moſt precious and glittering ſtones; over his ſhoulders, a thin vail (made by *Pallas* own hands) all white, in which is inſerted divers ſmall pieces of glaſs repreſenting the moſt reſplendent Stars; in his right hand he holdeth two balls, the one all of gold, the other half gold, half Silver; in the other hand an Ivory Harp with nine ſtrings, ſitting on a foot-cloth, wrought with ſtrange works, and Peacocks feathers; and near his ſide lyeth a tridental gold emboſſed maſs.

IV. *Plutarch* ſaith that in *Crete*, he had wholly humane ſhape and proportion, but without ears.

" By that was ſignified that Superiours and Judges " ought not to be carried away by prejudice nor per- " ſwaſion, but ſtand firm, ſtedfaſt and upright to all "without partiality.

V. Contrariwiſe the *Lacedæmonians* framed his picture with four ears.

" By that they ſignified that God heareth and un- " derſtandeth all things; and that Princes and Judges " ought to hear all informations, before they deliver " definitive ſentence or judgment.

VI. *Pauſanias* ſaith that in the temple of *Minerva* (among the *Argives*) the ſtatue of *Jupiter* was made with three eyes; two of them in their right places; the other in the middle of his fore-head.

" By which is ſignified his three Kingdoms, the one " Heaven; the other earth; the laſt Sea.

VII. With the *Eleans* (a people of *Greece*) the Statue of *Jove* was compacted of Gold and Ivory, empaled with a Coronet of Olive leaves; in his right hand the Image of *Victoria*; in his left a Scepter, on

the top of which was mounted the portraicture of an Eagle, upon a ſeat of Gold, enchaſed with the forms of many unknown birds and fiſhes, upheld and ſupported by four Images of *Victoria*.

VIII. In *Caria* (a place of the leſſer *Aſia*) the Statue of *Jupiter* was made holding in one of his hands a pole axe.

"The reaſon of this was, as *Plutarch* ſaith, from "*Hercules*, who overthrowing *Hippolyta* the Ama-"zonian Queen, took it from her, and gave it to *Om-"phale* his wife a *Lydian*. The *Platoniſts* underſtand by "*Jupiter*, the ſoul of the world; and that divine ſpirit, "through whoſe Almighty Power, every thing receives "its being and preſervation.

CHAP. XIV.

How the Antients depicted Mars.

I. MAcrobius ſaith that the Pictures of *Mars* were adorned and beautified with the Sun-beams, in as lively a manner as could be deviſed; with an Aſpect fierce, terrible, and wrathful, hollow red eyes, quick in their motion, face all hairy with long curled locks on his head, depending even to his ſhoulders of a coal black colour, ſtanding with a ſpear in the one hand, and a whip in the other.

II. He is alſo ſometimes depicted on horſe-back and ſometimes in a Chariot, drawn with horſes called *Fear* and *Horror*: ſome ſay the Chariot was drawn with two men, which were called *Fury* and *Violence*.

III. *Statius* ſaith he wore on his head a helmet moſt bright and ſhining, ſo fiery as it ſeemed, there iſſued flaſhes

flashes of lightning; a breast plate of Gold, insculp'd with fierce and ugly Monsters; his shield depainted all over with blood, enchased with deformed beasts, with a spear and whip in his hands, drawn in a Chariot with two horses, *Fury* and *Violence*, driven with two churlish coach-men, *Wrath* and *Destruction*.

IV. *Isidorus* saith that the Picture of *Mars* was depainted with a naked breast.

"By which is signified that men ought not to be timorous in warr, but valiantly and boldly expose "themselves to hazards and dangers.

V. *Statius* saith that the house of *Mars* was built in an obscure corner of *Thracia*, made of rusty, black Iron; the *Porters* which kept the gates were *Horror* and *Madness*; within the house inhabited *Fury*, *Wrath*, *Impiety*, *Fear*, *Treason* and *Violence*, whose governess was *Discord*, seated in a regal throne, holding in one hand a bright sword, in the other a basin full of humane blood.

VI. *Ariosto*, describing the Court of *Mars* saith, that in every part and corner of the same were heard most strange Ecchoes, fearful shrieks, threatnings, and dismal cryes; in the midst of this palace was the Image of *Vertue*, looking sad and pensive, full of sorrow, discontent and melancholy, leaning her head on her arm: hard by her was seated in a chair *Fury* in triumph: not far from her sate *Death*, with a bloudy stern countenance, offering upon an *Altar* in mens skulls, humane blood, consecrated with coals of fire, fetch'd from many Cities and Towns, burnt and ruinated by the tyranny of War.

CHAP. XV.

How the Antients depicted Phœbus *or* Sol.

I. MAcrobius ſaith that in *Aſſyria* was found the Statue of *Apollo*, *Phœbus* or *Sol*, the father of *Æſculapius*, in the form of a young man, and beardleſs, poliſhed with Gold, who ſtretching out his Arms, held in his right hand a Coachmans whip; and in his left a thunderbolt with ſome ears of Corn.

" The Tyrant of *Syracuſe*, *Dionyſius*, with fury pulled " off the beard from the figure of *Æſculapius*, ſaying it " was very incongruous that the father ſhould be beard- " leſs, and the ſon have one ſo exceeding long.

II. *Euſebius* ſaith that in *Egypt* the Image of *Sol* was ſet in a ſhip, carried up, and ſupported by a *Crocodile*: and that they (before letters were invented) framed the ſhape of the Sun, by a Scepter, in the top of which was dexterouſly engraven an eye.

" The Scepter ſignified Government: the eye, the " power which over-ſees and beholds all things.

III. The *Lacedæmonians* depicted *Apollo* with four ears, and as many hands.

" By which was ſignified the judgment and pru- " dence of God, being ſwift and ready to hear, but " ſlow to ſpeak, and from thence grew that proverb a- " mong the Grecians.

IV. *Herodotus* reporteth that the *Phœnicians* had the Statue of the Sun made in black ſtone, large and ſpacious at bottom, but ſharp and narrow at top, which they boaſted to have had from Heaven.

V. *Lactantius* ſaith that in *Perſia*, *Phœbus* or *Apollo* was their chiefeſt God, and was thus deſcribed; he had

the

the head of a Lyon habited according to the Perſian cuſtom, wearing on his head ſuch ornaments as the women of *Perſia* uſed, holding by main force a white Cow by the horns.

" The head of the Lion ſheweth the Suns Dominion " in the ſign *Leo*; the Cow ſhews the Moon, whoſe " exaltation is *Taurus*: and his forceable holding, the " Moons Eclipſe which ſhe cannot avoid.

VI. *Pauſanias* telleth that in *Patra* a City of *Achaia*, a metalline Statue of *Apollo* was found in the proportion of an Ox or Cow.

VII. *Lucianus* ſaith that the *Aſſyrians* ſhaped him with a long beard (ſhewing his perfection;) upon his breaſt a ſhield; in his right hand a ſpear, in the top of which was *Victoria*; in his left hand *Anthos*, or the Sun flower: this body was covered with a veſtment, upon which was painted the head of *Meduſa*, from which dangled downwards many ſwarms of ſnakes; on the one ſide of him *Eagles* flying, on the other ſide a lively *Nymph*.

VIII. The *Egyptians* compoſed the ſtatue of the Sun in the ſhape of a man, with his head half ſhaven.

" By the head half ſhaven, is ſignified that though his " beauty or ſhining may be clouded for a time, yet that " he will return and beautify the ſame with his priſtin " brightneſs; as the growing of the hairs (which ſig- " nify his beams) to their full extent and perfection a- gain may denote.

IX. *Martianus* thus deſcribes him; upon his head (ſaith he) he wears a royal and gorgeous Crown, inchaſed with multitudes of precious Gems; three of which beautifie his fore-head; ſix his temples; and three other the hindermoſt part of the Crown: his hair hanging down in treſſes, looks like refined Gold, and his Countenance wholly like flame: his veſtment is thin,

ſubtil, and wrought with fine purple and gold; in his right hand he holds a bright ſhield; and in his left a flaming fire-brand: on his feet he hath two wings, beſet with fiery Carbuncles.

X. *Euſebius* writeth that in *Elephantinopolis* (a City in *Egypt*) the Image of *Apollo* was framed to the due likeneſs of a man throughout the body, ſave only, that he had the head of a Ram, with young and ſmall horns, and his aſpect of a *Cerulean* and blewiſh green, not unlike to that of the Sea.

"The head of the Ram ſignifies the Sun's exaltation "in the ſign *Aries*; and the young horns the change or New of the Moon, made by her conjunction with the Sun, in which ſhe looks blewiſh.

There might you ſee with greateſt skill intexed,
The portraicture of Phœbus *lively drawn;*
And his fair Siſters ſhape thereto annexed,
Whoſe ſhining parts ſeem'd ſhadowed o're with lawn.
And though with equal art both were explain'd,
And workmens care gave each of them their due,
Yet to the view great difference remain'd,
In habit, ſhape, aſpect, and in their hue.
For one of them muſt give the day his light:
And th' other reign Commandreſs of the night.

CHAP. XVI.

How the Antients depicted Venus.

I. HEr Statue is framed in the ſhape of a moſt beautiful and young woman, ſtanding upright in a huge ſhell of fiſh, drawn by two other moſt ugly and ſtrange

ſtrange Fiſhes, as *Ovid* at large noteth.

II. *Pauſanias* ſaith ſhe is drawn in a Coach, through the airy paſſages, with two white Doves (as *Apuleius* alſo affirmeth) which are called the birds of *Venus*.

III. *Horace* and *Virgil* affirm that the Chariot of *Venus* is drawn by two white Swans, of which *Statius* alſo maketh mention, who ſaith that thoſe birds are moſt mild, innocent, and harmleſs, and therefore given unto *Venus*.

IV. *Praxitiles* an excellent engraver in the Iſland of *Guidos*, made her Image naked, and without clothes, as alſo did the Grecians.

" By which was ſignified that all luxurious and li-
" centious people, were by their inordinate luſts, like
" beaſts deprived of ſence, and left as it were na-
" ked and deſpoyled of reaſon, and underſtanding;
" and oftentimes alſo ſtripped thereby of their riches,
" goods and eſtates.

V. *Lactantius* ſaith that the *Lacedæmonians* framed and compoſed the Image of *Venus* all armed like a Warrior, holding in one hand a ſpear, in the other a ſhield or targer.

" And this was by reaſon of a certain Victory which
" the women of that place got over their enemies, the
" people of *Meſſenia*, which ſucceſs they ſuppoſed to have
" proceeded from the power and aſſiſtance of *Venus*, as
" inſpiring theſe womens hearts with courage, ſtout-
" neſs and reſolution.

CHAP.

CHAP. XVII.

How the Antients depicted Mercury.

I. THe Antients deſcribed him in the ſhape of a young man without a beard, with two ſmall wings fixed behind his ſhoulders and ears, his body almoſt all naked, ſave that from his ſhoulders depended a thin vail, which winded and compaſſed about all his body; in his right hand he held a golden purſe, and in his left a *Caduceus*, or ſnaky ſtaff, to wit, a ſlender white wand, about which two Serpents do annodate and entwine themſelves, whoſe heads meet together juſt at the top, as their tails do at the lower end.

" This reſemblance was called *Concordia* or *Signum* " *Pacis*; upon which it came to paſs, that Embaſſa- " dors, and great men in matters of State, carried al- " ways in their hand ſuch a like ſtaff, and were called " *Caduceators*.

II. *Apuleius* writeth that *Mercury* was a very youth, having very ſhort hair on his head of an Amber colour, and curled, having for a veſtment only a ſubtil and thin vail made of Purple Silk.

III. *Martianus Capella* deſcribes him young, yet of a ſtrong and well compoſed body, with certain young hairs of a yellowiſh colour ſprouting out of his chin.

IV. *Pauſanias* ſaith that in a Province of *Corinth*, he was depicted like a young man carrying a ram upon his ſhoulders: and that a Statue (brought from *Arcadia* unto *Rome*) erected in the temple of *Jupiter Olympicus*, had on its head a helmet of engraven ſteel; and over his ſhoulder, a coat, who held under his arm the Image of a ram.

V. Among

V. Among ſome of the *Egyptians* his Image was framed with a head like a dogs, holding in his right hand a *Caduceus* or ſnaky wand; ſhaking with his left a green bough of a Palm.

" By the head of the dog was underſtood ſubtilty " and craftineſs (no beaſt being ſo ſubtil as a dog;) by " the ſnaky wand the power of wiſdom and Elo- " quence in producing of peace, ſignified by the green " palm.

VI. By ſome he was depicted in the ſimilitude of a very aged man, his head almoſt bald, ſaving that on the ſides there remained ſome few hairs, ſhort and curled; his look grim, ſevere and ſowr; his complexion of a tawny, antient hue; his upper garment, of a Lions skin; in his right hand a huge pole-ax, in his left hand an Irow bow; at his back hanging a Quiver of ſteel-headed arrows: to the end of his tongue were faſtned many ſmall chains of Gold, at whoſe ends were tyed multitudes of all ſorts of men, which he ſeemed to draw unto him; looking alwayes backward, to behold the innumerable troops of people following him.

" By this deſcription is ſignified the all-powerful and " attractive vertue of Eloquence; which by his age " is underſtood to be found only in old, wiſe and expe- " rienced men, as being in them more mature and per- " fect, than in thoſe of younger years, of which *Homer* " ſpeaks at large in his Commendation and Praiſe of " *Neſtor*: from whoſe mouth (ſaith he) plentifully " rolled forth moſt pleaſant and dulcid ſtreams; whoſe " pen diſtilled cryſtalline drops of delicious ſweetneſs; " whoſe works and fruits ſo compleatly adorned with " golden ſentences, aſſwageth the malice of time, and " mitigateth and allayeth the ſpight of forgetfulneſs, " that his perpetuity is engraven in the braſs leaved " books of eternal memory, never to be blotted out.

CHAP.

CHAP. XVIII.

How the Antients depicted Diana *or* Luna.

I. *Diana*, *Cynthia*, *Lucina*, or *Luna* was according to *Propertius* depicted, in the likeneſs of a young beautiful virgin; having on either ſide of her forehead two ſmall gliſtering horns, newly putting forth, drawn through the air in a purple coloured Coach, by two ſwift paced horſes, the one of a ſad Colour, the other of a white.

" Theſe two differing horſes *Boccace* ſaith, ſhew that " ſhe hath power both in the day and night.

II. *Claudianus* ſaith that her Chariot was drawn by two white Bullocks, (which Image the *Egyptians* worſhiped with great zeal and reverence) having one of their flanks beſpotted with divers ſtars, and on their heads two ſuch ſharp horns, as the Moon hath in her chiefeſt wain.

III. *Cicero* deſcribes her ſtatue (which he brought out of a temple in *Cicilia*) of a wonderful height, and large dimenſion, the whole body covered with a thin vail, of a youthful aſpect, holding in her right hand a lively burning torch, and in her left an Ivory bow, with a Quiver of Silver headed arrows hanging at her back.

IV. The Poets (who call her the goddeſs of hunting and imperial governeſs of Woods and Groves) deſcribe her in the habit of a young *Nymph*, with her bow ready bent in her hand, and a Quiver of arrows hanging by her left ſide; a ſwift paced Greyhound faſt tyed to her right ſide, with a collar about his neck; and after her following troops of *Sylvan Virgins*, which

which are chaſt, and are called the *Nymphs* of *Diana*.

V. Theſe Virgins and Votreſſes of the Goddeſs, we thus deſcribe.

Scarce mounted Sol *upon his glorious Car,*
When o're the lofty hills, and lowly plain,
Running apace, you might perceive afar
A Troop of Amazons *to poſt amain.*
But when they nearer came unto your view,
You might diſcern Diana *and her Crew.*
A careleſs crew of lively Nymphs, deſpiſing
The joyous pleaſures and delights of love;
Waſting their days in rural ſports deviſing:
Which know no other, nor will other prove.
Wing'd with deſire to overtake the chaſe,
Away they flung with unreſiſted pace.
Their necks and purple veined arms are bare,
And from their Ivory ſhoulders to their knee,
A Silken veſtment o're their skin they wear,
Through which a piercing eye might chance to ſee.
Cloſe to their bodies is the ſame engirted,
Bedeck'd with pleaſing flowers their inſerted.
Each in her hand a Silver bow doth hold,
With well ſtor'd quivers hanging at their backs:
Whoſe arrows being ſpent they may be bold
To borrow freely of each others packs.
Thus are theſe nimble skipping Nymphs diſplai'd,
That do attend that Goddeſs, Queen and Maid.

VI. In *Arcadia* ſaith *Pauſanias* was a ſtatue of *Diana*, covered over with the skin of a Hind, and from her ſhoulders hung a Quiver of Arrows; in the one hand a burning Lamp, the other leaning upon the heads of two ſerpents, and before her feet a hound.

VII. The

VII. The *Egyptians* worſhiped her under the name of *Iſis*; and depictured her covered with a black and ſable veſtment, in token that ſhe her ſelf giveth no light; holding in one hand a Cymbal, in the other an earthen veſſel of water, upon which as *Servius* ſaith, many thought her to be the Genius of *Egypt*.

"By the Cymbal is ſhewed the murmurings, and "roarings of *Nilus*, when it overflows *Egypt*; and by "the other veſſel the nature of the Country, which is "moiſt and full of lakes, pools and rivers.

CHAP. XIX.

How the Antients depicted Janus.

I. JAnus is depicted with two faces; in the one of his hands is a long rod or wand; in the other a Key.

"The two faces of *Janus* ſignifie time; the one be-"ing withered and hoary, ſhews time paſt; the other "youthful and beardleſs, time to come.

II. *Pliny* ſaith that *Numa* King of the *Romans*, cauſed the ſtatue of *Janus* to be hewed out in ſuch ſort, that the fingers of his hands appeared to be three hundred ſixty five, to ſhew that he was God of the year, whereupon they called the firſt month of the year *Januarius*, from *Janus* their God.

"Under the feet of *Janus* is oftentimes placed twelve "Altars, ſhewing thereby the months of the year, or "ſigns of the Zodiack, through which *Sol* makes his "revolution.

III. The *Phœnicians*, as *Cicero* and *Macrobius* report, framed his Image in the form of a ſerpent, holding her tail

tail in her mouth, and continually turning round.

IV. Some depicted *Janus* with four faces, (as were those statues which were found in divers places of *Tuscany*.

"By the four faces was signified the four seasons of "the year, *Spring*, *Summer*, *Autumn* and *Winter*: "which some think to be *Venus*, *Ceres*, *Bacchus* and "*Vulcan*; and sometimes the winds with *Æolus* their "Commander.

CHAP. XX.

How the Antients depicted Aurora.

I. *Homer* describes her like a young Virgin, having her hair disheveled, and hanging loose about her shoulders, being of the colour of the purest gold, sitting in a golden chair, with all her vestments of that hue and colour.

II. *Virgil* saith, that upon the instant time of the sable nights departure, she cometh with one of her hands full of Roses, Gilliflowers and Lillies, taken out of a basket which she carries in the other hand, which she besprinkles on the marble pavement of the lower Heavens, adorning the Sun with unspeakable beauty.

III. Others describe her, holding in one hand a flaming torch, and drawn in a gorgeous and star bespotted Chariot, by winged *Pegasus*; which favour she obtained of *Jupiter* by many importunate requests, presently after the downfall of *Bellerophon*.

IV. She is as it were the Herald and Messenger of *Phœbus*, who receives her being from the vertue of his beams; and is no other, but that rubicund and Vermilion

milion blush in Heaven, which *Sol*'s first appearande worketh in the *Orient*, and from thence descending beautifies our *Hemisphere* with such a resplendency. See the tenth Section of the one and twentieth Chapter of the first Book.

CHAP. XXI.

How the Antients depicted Juno.

I. SHe was set forth by the Ancients like a middle aged woman, holding in one hand a silver vessel, in the other a sharp Spear: and *Homer* saith she was drawn in a Chariot glistering with precious stones; whose wheels were Ebony, and their nails fine silver, mounted upon a silver seat; and drawn with horses, which were fastned with chains of gold.

II. She is oftentimes depicted with a Scepter in her hand, to shew that she hath the bestowing of Governments, Authorities and Kingdoms.

III. *Martianus* depicts her (sitting in a chair under *Jupiter*) with a thin veil over her head, with a Coronet upon it, inchased and adorned with many precious Jewels; her inward vestment fine and glittering; over which depended a mantle of a sad and darkish colour, yet with a secret shining beauty; her shoes of an obscure and sable colour; in her right hand a thunderbolt; and in her other a loud noised Cymbal.

IV. *Pausanias* saith that in a temple in *Corinth*, her statue (made of Gold and Ivory) was adorned with a glorious Crown, on which was insculped the pictures of the *Graces*; with a *Pomegranate* in the one hand, with a Scepter (on the top of which a Cuckow) in the

the other: for that *Jupiter*, when he was first enamoured of *Juno*, transformed himself into that bird.

"Touching this story (and others of like kind) "*Pausanias* saith, that although he did not believe such "things to be true, nor any others, which are so writ-"ten of the Gods; yet saith he, they are not altoge-"ther to be rejected, in that there were no such things "reported but that they were impleated and filled "with mysteries, and carried in themselves an inward "meaning, and secret understanding, the which no "doubt some might by their writings have unshadow-"ed, if the tyranny of fore passed times had not de-"stroyed and obliterated the same.

V. *Tertullian* writeth that in *Argos* a City in *Grecce*, the statue of *Juno* was covered all over with the boughs of a Vine, and underneath her feet lay the skin of a Lion, which discovered the hatred and disdain she bare towards *Bacchus* and *Hercules*, to whom (as the Poets say) she was step-mother.

VI. Some have painted her a middle aged woman, holding in one hand a poppey flower or head; with a yoke or pair of fetters lying at her feet.

"By the yoke was meant the band of marriage, "which tyeth man and wife together; and by the "Poppey, fruitfulness or the innumerable issue of chil-"dren, which are brought forth into the world (sig-"nified by the roundness of the Poppey head, and its "numberless seeds therein contained.) From hence "many suppose her to be the goddess of marriage.

CHAP. XXII.

How the Antients depicted Ops *or* Tellus.

I. MArtianus ſaith, that *Ops* (the wife of *Saturn*) is an old woman, of great bigneſs, continually bringing forth children, with whom ſhe is encompaſſed and ſet round, going in a green veſtment, with a veil over her body, ſpotted with divers colours, wrought with infinite curious knots, and ſet with all ſorts of Gems and Metals.

II. *Varro* (out of *Boccace*) thus deſcribes her: ſhe is crowned (ſaith he) with a Crown inſculp'd with Caſtles and Towers; her apparel green, overſhaded with boughs; in the one hand a Scepter, in the other a Ball or Globe; and near to her a Chariot of four wheels, drawn by four Lions.

"By the Crown is ſignified the habitations of the "earth; by the greenneſs and boughs, the increaſe there-"of; by the Scepter, the Kingdoms and Governments of "the world; by the ball, the roundneſs thereof; by "the Chariot, the continual motion, change and alte-"ration of things; by the Lions, the wiſdom and "ſtrength of mankind, by which things are carried on "and managed.

III. *Iſidorus* ſaith that this Goddeſs was painted holding a key in one of her hands: which ſhews that in the winter the bowels of the earth are locked up by reaſon of cold; which at the approach of Spring and Summer is unlocked again.

IV. She was ſometimes depicted in the form of an ancient woman, having her head circumcinct with ears of corn, holding in her hand a poppey-head: drawn

drawn in a Chariot (as *Orpheus* ſaith) with two fierce and untamed *Dragons*.

V. The earth is alſo called *Ceres*, which many have depicted with torches, lights and fire-brands in her hands; as *Praxiteles* in a temple, ſeated upon a promontory of *Attica*.

CHAP. XXIII.

How the Anitents depicted Neptune *and the Sea Gods.*

I. NEptune among the Antients is depainted with ſeveral countenances, ſometimes with mild and pleaſant looks, ſometimes with lowring and ſad, and at other times with a mad, furious, and angry aſpect; naked, holding in his hand a ſilver trident or forked mace, ſtanding upright in the concavity of a great Sea ſhell, forcibly drawn by two monſtrous horſes, which from the middle downwards have the proportion and ſhape of fiſhes, as *Statius* ſaith.

"That variety of Aſpect (according to *Virgil* and "*Homer*) is given him from the Sea, in that it at ſun-"dry times ſheweth it ſelf ſo: and the trident, the "three Gulfs of the Mediterranean Sea.

II. Sometimes he is depainted with a thin veil hanging over one of his ſhoulders, of a *Cerulean* or blewiſh colour.

III. *Lucianus* ſetteth him down with marvellous long hair hanging down over his ſhoulders, of a very ſad and darkiſh colour.

"Yet *Servius* and others affirm that all the Gods of "the Sea were for the moſt part in the ſhape of old

" men with white and hoary hairs, proceeding from the " froth or ſpume of the Sea.

IV. *Plato* deſcribes him in a ſumptuous Chariot, holding in one hand the reins of a bridle: in the other a whip, drawn by Sea-horſes galloping.

V. *Martianus* deſcribes him of a greeniſh complexion, wearing a white Crown: ſignifying thereby the ſpume and froth of the Sea.

VI. *Glaucus* (another Sea God) ſaith *Philoſtratus*, hath a long white beard and hair, ſoft and dropping about his ſhoulders; his eyes green and gliſtering; his brows full of wrinkles, and green ſpots; his breaſt all over-grown with greeniſh Sea weed or moſs, his belly and from thence downwards fiſh like, full of fins and ſcales.

VII. *Galatea* (a Sea Goddeſs) is deſcribed (by the ſaid *Philoſtratus*) to be drawn in a ſtrange framed Chariot, by two mighty Dolphins, which were guided by two ſilver reins held in the hands of old *Triton's* daughters; over her head, a Canopy made of Purple ſilk and ſilver, with her hair hanging careleſly over her ſhoulders.

See another deſcription of her at the ſeventh Section of the one and twentieth Chapter of the firſt Book.

VIII. *Oceanus* (the father of all the Sea Gods) ſaith *Thales Mileſius*, is depainted, drawn on a glorious Chariot, accompanied and attended with a mighty company of *Nimphs*; with the face of an old man, and a long white beard.

IX. *Æolus* is depainted with ſwoln blub cheeks, like one that with mainforce ſtrives to blow a blaſt; two ſmall wings upon his ſhoulders, and a fiery high countenance.

He is called the God and Ruler of the winds, whoſe deſcriptions are in the three and twentieth Chapter of the firſt Book.

X. *Thetis*

X. *Thetis* (another Sea Goddeſs) is depicted by the ſixth Section of the one and twentieth Chapter of the firſt Book.

CHAP. XXIV.

How the Antients depicted Nemeſis.

I. SHe was by *Macrobius* deſcribed with wings on her ſhoulders; hard by her ſide the rudder of a ſhip, ſhe her ſelf ſtanding upright upon a round wheel; holding in her right hand a golden ball, in the other a a whip.

II. She is often depicted, holding the bridle of an horſe in one hand, and in the other a ſtaff.

III. *Chryſippus* (as *Aulus Gellius* ſaith) deſcribed her like a young Virgin, beautiful and modeſt, with an eye prying round about her, for which cauſe the ancients called her the all-diſcerning Lady.

"This *Nemeſis*, as *Pauſanias* and *Amianus Marcelli-*
"*nus* ſay, was held to be the Goddeſs of Puniſhments,
"who caſtigates the offences of Malefactors, with
"pains and torments, according to their ſins and de-
"merits; and rewarding the vertuous with honour
"and dignities: ſhe was the daughter of *Juſtitia* (who
"dwells and inhabits very ſecretly, within the houſe of
"Eternity, recording the offences of the wicked) and
"a moſt ſevere and cruel puniſher of arrogancy and
"vain glory. *Macrobius* ſaith, that this *Nemeſis* was
"adored among the *Egyptians* (by them called alſo
"*Rhammuſia*) as the revenger and chief enemy of
"Pride, Inſolency, and Haughtineſs; and that ſhe had
"erect and dedicated unto her, a moſt ſtately and mag-
"nifique ſtatue of Marble.

CHAP. XXV.

How the Antients depicted Pan.

I. PAn (the God of Flocks and Sheep) is from the middle upwards in proportion like a man, with his face ruddy and ſanguine, being very hairy; his skin and breaſt covered with the skin of a ſpotted Doe or *Leopard*; in the one hand a ſhepherds hook, in the other a whiſtle: from the middle downwards the perfect ſhape of a goat, in thighs, legs and feet.

II. *Juſtine* ſaith, that *Pan's* Statue was made in a temple in *Rome*, near the hill *Palatine*, appearing to the view all naked, ſaving that it was ſlightly enſhadowed and covered with a Goats skin.

" Thereby is ſignified that (as it was reputed in thoſe " days) *Pan* kept his habitation among Hills, Woods " and Groves, who was indeed moſt of any adored and " worſhiped by Shepherds, as he that had the peculiar " care and Government of their flocks.

Goat-eared Pan, *his ſmall tipt, new grown horns*
Advance themſelves, about whoſe either ſide
A flowry Garland twines, and there adorns
His curled Temples with a wondrous Pride.
His face is of a high and reddiſh bluſh,
From which hangs down a ſtiff rough beard or buſh.
And for his bodies veſture he doth wear
The fineſt skin of the moſt ſpotted Doe,
That ever any in thoſe woods did bear,
Which from his ſhoulder looſe hangs to his toe.
And when he walks, he carries in his hand
A Shepherds hook, made of a knotleſs wand.

" *Servius*

" *Servius* ſaith, by the horns is ſignified either the " Beams of the Sun, or New of the Moon, at what " time ſhe is horned: his red face ſignifies the element " of fire: his long beard, the Air: his ſpotted garment, " the ſtarry firmament: his Shepherds hook, the rule " and Government of nature.

IV. After the form of *Pan* were the *Fauns*, *Sylvans*, *Satyres* and *Fairies* ſet forth, having little ſhort horns growing on their heads, with ſmall ears, and ſhort tails.

" Theſe are held among ſome people in very great " regard and obſervance, being of a wonderful ſpeed in " running. *Plutarch* writeth, that there was one of " theſe brought and preſented for a rare gift unto " *Sylla*, as he returned from the wars againſt *Mi-* " *thridates*.

V. *Plato* underſtandeth by *Pan*, Reaſon and Knowledge; which is twofold; the one of a man, the other of a beaſt: by the upper part of *Pan*, he ſignifies truth, accompanied with *Reaſon*, which being Divine, lifteth man up towards *Heaven*: by the lower parts of him is ſignified the falſeneſs, beaſtlineſs and rudeneſs of thoſe, which living here in the World, are only delighted with the pleaſures and fooliſh vanities thereof.

CHAP. XXVI.

How the Antients depicted Pluto.

I. MArtianus ſaith that *Pluto* ſitteth (in the lower region) majeſtically in a chair, holding in one of his hands a black imperial Scepter, and on his

head a ſtately Crown; at whoſe left hand ſitteth his wife *Proſerpina*, attended with many Furies, and evil Spirits, and at whoſe feet lyeth chained the Dog *Cerberus*.

II. The ancients alſo have painted him drawn in a Chariot, drawn with four furious black horſes, from out whoſe fiery noſtrils proceedeth thick and ill-ſavoured ſmoak, as *Claudianus* ſaith.

III. Some ſay that his head is encircled with a garland of *Cypreſs* leaves; others with *Narciſſus* leaves.

"The firſt ſhew ſadneſs and horror, uſed in burials, "and about the dead: the other are more grateful, and "are uſed in memory of the untimely death of that "youth.

IV. *Charon* (*Pluto*'s Ferriman, which carries ſouls over the three rivers of Hell, *Acheron*, *Cocytus* and *Styx*) is deſcribed old, yet exceeding ſtrong, with a black mantle hanging looſely over his ſhoulders, as *Boccace* and *Servius* ſay.

"By *Charon* is underſtood time; and whereas he is "ſuppoſed to have the tranſportation of ſouls from the "one ſide of thoſe rivers to the other; thereby is ſignified, that time, ſo ſoon as we are born and brought "forth into the world, doth carry us along by little "and little unto our deaths; and ſo ſetteth us over "thoſe rivers, whoſe names by interpretation ſignifie "ſorrowfulneſs, for that we paſs this life with miſery and adverſity.

CHAR.

CHAP. XXVII.

How the Antients depicted the Parcæ, *or Sisters.*

I. THe Sisters which are called *Parcæ*, are said to attend upon *Pluto*, which are three, and are called *Clotho*, *Lachesis* and *Atropos*.

II. *Clotho* takes the charge of the Births and nativities of mortals: *Lachesis* of all the rest of their life: and *Atropos* of their death, or departure out of this world.

III. They are all three depicted sitting on a row, very busily employed in their several offices; the youngest Sister drawing out of a Distaff a reasonable big thread: the second winding it about a wheel, and turning the same, till it becomes little and slender: the eldest (which is aged and decrepit) stood ready with her knife, when it should be spun to cut it off.

IV. And they are described to be invested with white veils, and little Coronets on their heads, wreathed about with garlands, made of the flowers of *Narcissus*.

CHAP. XXVIII.

How the Antients depicted Minerva, *or* Pallas.

I. M*Inerva* (as taken for *Bellona*) *Licophrones* saith was depicted with a flaming fire-brand in her hand by the Antients.

II. Most writers have described M*inerva* in the shape of a young woman, of a lively and fresh countenance, yet of an angry look, fix'd stedfast eye of a blewish green

green colour, compleatly armed at all weapons, with a long Spear in the one hand, and in the other a Cryſtal ſhield, or target: upon her helmet a garland of Olive branches, and two children, Fear and Horror, by her ſide with naked knives in their hands, ſeeming to threaten one another.

III. *Pauſanias* ſaith that in *Greece*, the ſtatue of *Minerva* was made with an helmet, on the top of which was the ſhape of a *Sphynx*; and on the ſides thereof, two carved *Griffins*.

IV. *Phidias* making her ſtatue in *Greece*, placed on the top of her Helmet the form of a Cock.

V. She was alſo painted in *Greece*, ſitting on a ſtool, and drawing forth little ſmall threads from a diſtaff; for that the Ancients ſuppoſed her to be the inventreſs of ſpinning and the like.

CHAP. XXIX.

How the Antients depicted Vulcan.

I. *Vulcan* is depicted, ſtanding, working and hammering in a Smiths forge, on the hill *Ætna*, framing Thunderbolts for *Jupiter*, and faſhioning Arrows for the God of love. *The opinions which the Ancients had of* Vulcan *were various, in which reſpect he is ſhaped ſometimes in one form, ſometimes in another.*

II. Some make him lame of one leg, of a very black and ſwarthy complexion, as it were all ſmoaky; of a general ill ſhaped proportion in all his Lineaments; and becauſe that he is the husband of *Venus*, often depicture her with him.

III. *Alexander Neapolitanus* relateth that in one place of

of *Egypt*, was erected the ſtatue of *Vulcan*, which held in one of its hands, the true and lively proportion of a mole; and in his other hand a Thunderbolt.

"The mole was ſo placed, becauſe they thought he "ſent unſpeakable numbers of moles among them, as a "plague to them, which did eat, gnaw, and deſtroy "every thing which was good.

CHAP. XXX.

How the Antients depicted Bacchus.

I. *Philoſtratus* ſaith that his ſtatue was framed in the likeneſs of a young man without a beard, of a corpulent and groſs body, his face of an high colour and big; about his head a garland of Ivy leaves; upon his temples two ſmall horns; and cloſe by his ſide a certain beaſt, called a *Leopard* or *Panther*.

"This deſcription is drawn from the nature of wine, "(of which as the Poets feign, *Bacchus* is the God) "whoſe inventer and finder out was certainly *Noah*, "which not only *Moſes*, but alſo *Joſephus* and *Lactan-* "*tius* ſpecially affirm; wherefore ſome ſuppoſe him to "be this God *Bacchus*.

II. *Claudianus* ſaith, that his Image or Statue is made all naked; thereby ſhewing the nakedneſs of thoſe which abuſe themſelves with wine, by which they reveal and open thoſe things which ought to be concealed and kept hid.

III. *Diodorus Siculus* ſaith, that *Bacchus* among the *Grecians* was depicted in two ſeveral forms, the one of a very aged man, with a long beard, ſtiff and thick; the other of youthful years, of a pleaſant and amorous aſpect.

"By

"By the first is shewed the effects of the intemperate "use of wine, which overcomes nature and brings "with it old age: by the other, how it cherishes and "revives the heart, used moderately.

IV. *Macrobius* saith that *Bacchus* was framed sometimes in the likeness of a young child, sometimes of a youth, sometimes of a man; and sometimes in the likeness of decrepit old age.

"By these was signified the four seasons of the year, "the vine being dedicated to *Sol*, in whom they all exist.

V. This Picture was made in the likeness of a Bull (among the *Cirenians*, a people inhabiting the farther part of *Persia*.)

"The reason hereof was because *Proserpina* (the "daughter of *Jove*) brought him forth in that form.

VI. *Philostratus* saith that *Bacchus* was oftentimes drawn clothed in womens garments, and in a long purple robe; wearing upon his head a Coronet of Roses, with companions and followers, all in like loose and wanton garments, fashioning themselves, some like rural *Nymphs*, as the *Dryades*, *Oreades*, &c. some like Sea *Nymphs*, as *Nereides*, *Syrens*, &c. some like *Satyres*, *Fauns*, and *Sylvans*, &c.

"The womens garments shew that wine makes a "man faint, feeble, and unconstant like to a woman.

VI. *Pausanias* saith that among the *Eleans*, the picture of *Bacchus* was made with a long beard, and clothed with a long gown hanging to the feet; in one hand a sharp hook, and in the other a boul of wine, and round about him many Vine-trees and other fruitful plants.

VII. The Statue of *Bacchus* also, was sometimes set forth and adorned with Coronets made of fig-tree leaves, in memory of a *Nymph* (as some say) called *Syca*, which was by the Gods metamorphosed into that plant.

"In

"In like manner, the Nymph *Staphilis* (on whom "*Bacchus* was in like manner enamoured) was trans-"formed into the Vine, from whence it is that thoſe "plants are ſo exceeding grateful and pleaſant unto "this God.

CHAP. XXXI.

How the Antients depicted Fortune.

I. FOrtune was depicted by ſome with two faces, the one white and well-favoured; the other black, and ugly.

"And this was becauſe it was held, that there were "two Fortunes, the one good, from whom came rich-"es, happineſs, quiet, content and pleaſure: the other "bad, from whom came wars, afflictions, croſſes, "diſaſters, calamities, and all other miſeries whatſo-"ever.

II. The *Thebeans* made her in the ſhape of a woman; in one of her hands a young child, to wit, *Pluto* or Riches.

"So that in the hands of Fortune, they put the di-"ſpoſing of Wealth, Honour, Glory and all Happi-"neſſes.

III. *Martianus* deſcribes her a young woman, always moving, covered with a garment of the thinneſt ſilk; her ſteps uncertain, never reſting long in a place; carrying in her ſpacious lap the univerſal fulneſs of the treaſures, riches, honour and glory of this world; which in haſty manner (with her hand) ſhe offers; which offer, if not inſtantly received, was utterly loſt; in her right hand a white wand, with which ſhe ſmites

ſuch

such as offend her, slight her kindness, or are not nimble enough to receive them.

Oh cruel Fortune, stepdame to all joys,
That disinherits us from sweet content,
Plunging our hopes in troubled Sea's annoyes;
Depriving us of that which nature lent!
When will thy proud insulting humour cease,
T' asswage the sorrows of an only one?
That free from cares, its soul may live in peace,
And not be metamorphos'd into stone.
But why entreat I thy unstable heart,
Knowing thy greatest pleasure, thy delight
Consists in aggravating mortals smart
Poyson'd with woes, by venom of thy spight?
'Tis what thou wilt, must stand, the rest must fall,
All humane Kings pay tribute to thy might:
And this must rise, when pleaseth thee to call,
The other perish in a woeful plight.
And this is it, that chokes true vertues breath,
Making it dye, though she immortal be:
Fruitless it makes it; subject unto death,
To fatal darkness, where no eye can see.
Oh come you wounded Souls, conjoin with me;
In some adumbrate thicket let us dwell,
Some place which yet the Heavens ne'r did see,
There let us build some despicable Cell.
Strength, Beauty, perish: Honours fly away:
And with Estates, Friends vanish and decay.

IV. In a temple in *Greece*, *Fortune* was made in the form of a grave Matron, clothed in a garment agreeable to such years, whose countenance seemed very sad; before her was placed the Image of a young Virgin of a beauteous and pleasant aspect, holding out her hand

to

to another; behind these, the Image of a young child, leaning with one of its arms upon the Matron.

"The Matron is that Fortune, which is already past; "the young Virgin, that which now is: and the young "child beyond them both, is that which is to come.

Quintus Curtius saith, that among the people of *Scythia*, *Fortune* was depicted in the form of a woman without feet, having round about her at her right hand a number of little wings.

"Being without feet, shews that she never stands "firm; and the many wings shew, that her gifts and "favours are no sooner given, but are presently lost, "and do as it were fly away again, before they be fully "possessed.

VI. *Alexander Neapolitanus* relateth that in *Greece*, her Image was made wholly of Glass; to shew that her favours are brittle, and subject to sudden decays.

VII. *Cebes* the Philosopher resembled *Fortune* unto a Comedy; in which many Actors appear often as Kings and great Monarchs; and presently after become poor fishermen, slaves, bond-men, and the like.

VIII. *Socrates* compared her to a Theatre, or common meeting place, where without all order or observance men take their places and seats, without respect to the dignity of any.

"Hereby is shewed that she (without respect of "birth, worth, merit or state,) blindly, unadvisedly, "and without any order or reason, bestows felicities, "riches and favours.

IX. In *Egira*, a City of *Achaia*, *Fortune* was drawn in the shape of a beautiful woman, who held in one of her hands a *Cornucopia*; in the other, the boy *Cupid*.

"By which is signified (as *Pausanias* saith) that "beauty without riches avails nothing: and indeed I "may

" may say he is doubly fortunate, who in his love en-
" joys the fruition of both beauty and riches: but he
" is happy in the superlative degree, who with the o-
" ther two meets with vertue also.

X. *Giraldus* saith that *Fortune* was with some depicted riding on a horse galloping; with which swiftness she seems to pass invisible; after whom followeth *Destiny* with great wrath and fury, holding in her hand an Iron bow, and aiming to strike Fortune at the heart.

" By her swift galloping, is signified her mutability.
" See the fourth Section of the eighteenth Chapter of
" the first Book.

CHAP. XXXII.

How Vertue, Truth, Peace, Honour, Fame and Opinion were depicted.

I. VErtue in *Greece* was made in the form of a *Pilgrim*, like a grave and austere woman; sitting alone upon a four squared stone, melancholy, and leaning her head upon her knees.

" Being a Pilgrim, shews she hath no resting place,
" secure abode, or certain habitation upon the earth:
" the form of her sitting, shews her life to be full of
" troubles, dangers, crosses, and miseries. See the first
" Section of the nineteenth Chapter of the first Book.

Hæc angusta via horrendis scatet undique monstris,
Et vita innumeris est intercluſa periclis.
Sed tamen incolumes hâc virtus ducit alumnos
Extrema ut vitent, ne pes hinc indè vacillet.

Pro-

Proclamat longè ſpes, hic ſunt digna laboris
Præmia, et excipient mordaces gaudia curas.
Pax, ſincera quies nullo temeranda dolore,
Lætitia hic habitant longum, ſine fine, per ævum.

Fierce Monſters do this narrow paſſage bound,
And deadly dangers it encompaſs round.
Yet virtue doth her Followers ſafely guide,
Leſt they ſhould go aſtray on either ſide.
And Hope proclaims afar; loe here you ſhall
Have joy for Sorrow; honey for your gall.
Here Peace and joyful reſt for ever dwell,
Which neither croſs nor time ſhall ever quell.

II. *Truth*, ſaith *Hippocrates*, was framed in the ſimilitude and likeneſs of a beautiful woman, attired with gravity and modeſty: *Philoſtratus* ſaith that ſhe remaineth in the cave of *Amphiarus*, cloathed all in white garments of a beautiful hue: *Lucianus* ſaith that her ſtatue was made in the form of a young woman, habited in rags, and baſe attire, with a ſuperſcription over her head, how ſhe was *wronged and abuſed by Fortune.*

III. *Peace*, ſaith *Ariſtophanes*, was framed in the ſhape of a young woman, holding between her arms the Infant *Pluto*, the God of Riches, and Ruler of the lower Regions.

"She is alſo called *Concordia*, and is a ſpecial friend "to the Goddeſs *Ceres*, from whom comes the en"creaſe of Fruits, Corn, and other nutriments. See "the ſeventh Section of the eighteenth Chapter of the "firſt Book.

IV. *Honour* is depicted with two wings on its ſhoulders; which as *Alciatus* ſaith, was made in the form of a little child, cloathed in a purple garment, having a Coronet or wreath of Laurel about his head; hold-

ing hand in hand the God *Cupid*, who leads the child to the Goddess *Vertue*, which is depainted right over against it.

V. *Fame* is painted like a Lady, with great wings, and seeming to proffer a flight, and to mount from the *Earth*, and rove abroad: having her face full of eyes; and all over her garments an infinite number of ears and tongues. *See the tenth Section of the eighteenth Chapter of the first Book.*

VI. *Opinion*, saith *Hippocrates*, resembles a young woman, not altogether so fair and lovely as *Truth*, yet not deformed, or ill proportioned; being rather impudent than modestly bold in her demeanure, with her hand stretched forth to take whatsoever is offered and presented to her.

CHAP. XXXIII.

How Night, Sleep, Silence, Pleasure and Fear were depicted.

I. *Night* (the mother of *Sleep* and *Death*) was depicted by the Antients in form of an old woman, having two great wings growing on her shoulders, all cole black, and spread abroad, as if she seemed to offer a flight; and that she is drawn in a Chariot, whose wheels are made of Ebony: having a sad countenance, and an upper garment of a deep black, spotted all over with silver spots like stars, as *Boccace* saith. *See the thirteenth Section of the thirteenth Chapter of the third Book.*

II. *Sleep* (the brother of *Death*) saith *Hesiod*, was painted of a most sour, lowring, and sad aspect; aged, and

and holding in her left hand a young child very beautiful; and in her right, another child, of a moſt ſwarthy, black and dull complexion, with legs and arms very crooked. *Philoſtratus* in a Tablet (which he made for *Amphiarus*) makes her like an aged woman, ſlothful and ſluggiſh, cloathed with ſeveral garments, the under black, the upper white; holding in one of her hands, a horn pouring forth ſeed.

"By the garments is ſignified night and day; by the "ſeed, reſt, eaſe and quiet.

III. *Harpocrates* (the God of *Silence*) called in *Greek Sigaleon*, was made, as *Martianus* and *Apuleius* ſay, in likeneſs of a young child, who cloſe to his lips held one of his fingers as a ſign of ſecrecy. Some portraict him without any face at all; all covered with the skin of a wolf; painted full of eyes and ears:

"Shewing it to be good to ſee and hear much, but "to ſpeak little.

IV. *Voluptia* or pleaſure, was depainted a Lady, having a pale and lean countenance, ſitting in a pontifical and majeſtick chair, embroidred and emboſſed with ſtars of gold, treading and trampling upon *Vertue*.

V. *Fear*, ſaith *Pauſanias*, was ſhaped in ſeveral forms by the Antents; ſometimes with the head of a Lion among the Grecians (as on the ſhield of *Agamemnon*:) and ſometimes with the deformed face and body of a woman.

"The Corinthians dedicated this Picture ſo made "unto the ſons of *Medea*; which were ſlain for bring-"ing ſuch fatal gifts to the daughter of old *Creon*, "whereby ſhe, and all that regal family periſhed, and "were for ever extinct.

CHAP. XXXIV.

How the Antients depicted ſeveral wiſe men and Philoſophers.

I. SIdonius *Apollinarius* in the ninth Epiſtle of his ninth Book, ſaith that the Philoſopher *Zeuſippus* was painted with a crooked neck; *Aratus* with a neck bowed downwards: *Zeno* with a wrinkled forehead.

II. *Epicurus* was painted with a ſmooth skin; *Diogenes* with a hairy rough beard: *Socrates* with whitiſh bright hair.

III. *Ariſtotle* was painted with a ſtretched out arm; *Xenocrates* with a leg ſomewhat gathered up; *Heraclitus* with his eyes ſhut for crying.

IV. *Democritus* with his lips open, as laughing: *Chryſippus* with his fingers cloſe preſſed together, for numbering: *Euclid* with his fingers put aſunder, for the ſpace of meaſures.

V. In ſome antient Bibles and many Pictures, *Moſes* is deſcribed with horns.

" The ground of this abſurdity was a miſtake of the " Hebrew Text, in that of *Moſes* deſcending from the " Mount, upon the nearneſs of the words, קֶרֶן *Keren*, *Cornu*, an horn; and קָרַן *Karan*, *Luceo*, to ſhine. " The vulgar tranſlation (of *Exodus* 34. 29. 35.) a- " grees with the former, to wit; *Ignorabat quòd cornuta eſſet facies ejus. Qui videbant faciem* Moſis *eſſe " cornutam.* The tranſlation of *Paulus Fagius* is other- " wiſe, viz. Moſes *neſciebat quòd multus eſſet ſplendor " gloriæ vultûs ejus. Et viderunt filii* Iſrael *quòd multa " eſſet claritas gloriæ faciei* Moſis. Tremelius *and* Ju- " nius *have it thus, ut ignoraret* Moſche *ſplendidam eſſe " faciam*

"*faciam cutem faciei ſuæ. Quòd ſplendida facta eſſet cu-*
"*tis faciei* Moſchis. Agreeing with the Septuagint
"δεδόξασται ἡ ὄψις τὸ γρώματος τὸ προσώπου, *glori-*
"*ficatus eſt aſpectus cutis ſeu coloris faciei.*

V. *Alexander* the great is deſcribed by ſome, riding upon an Elephant.

"The reaſon thereof is hard to be diſcerned; for as
"much as I find not in hiſtory, that ever he uſed that
"beaſt in his Armies, much leſs in his own perſon: ex-
"cept it were for that remarkable battel, which he
"fought with *Porus* King of *India*; wherein were ma-
"ny Elephants: In which himſelf (as *Curtius Arianus*
"and *Plutarch* relate) was on horſe-back; the name
"of which beaſt yet lives, and is famous in hiſtory to
"this day.

CHAP. XXXV.

Of the farther Progreſs of theſe Arts.

I. *AS God Almighty (who is the Author of all wiſdom) was the firſt inſtitutor hereof, ſo alſo was he the promulgator, by whom theſe Arts have made progreſſion in the world.*

Certainly, ſaith *Philoſtratus*, Picture is an invention of the Gods; as well for the painted faces of the meadows adorned with flowers, according to the ſeveral ſeaſons of the year; as for thoſe things, which appear in the ſky. What wonderful eloquence is this! that in ſo few words, this Philoſopher ſhould clear ſo great a point. But what ſaith *Gregorius Nyſſenus*? Man, ſaith he, is an earthen ſtatue: and *Suidas in Oratione primâ de Beatitudinibus*, ſpeaking of *Adam*, ſaith, This was the firſt ſtatue, the Image named by God, after which all

the art of Carving uſed by men receiveth directions: *Lot*'s wife was another, turned into a durable pillar of Salt, of whom *Prudentius* (*in Harmartigenia*) ſaith, ſhe waxed ſtiff, being changed into a more brittle ſubſtance, ſhe ſtandeth metamorphoſed into ſtone, apt to be melted, keeping her old poſture in that Salt-ſtone Image; her comlineſs, her ornaments, her forehead, her eyes, her hair, her face alſo (looking backward) with her chin gently turned, do retain the unchangeable monuments of her antient offence: and though ſhe melteth away continually in ſalt ſweat; yet doth the compleatneſs of her ſhape ſuffer no loſs by that fluidity; whole droves of beaſts cannot impare that ſavoury ſtone ſo much, but ſtill there is liquor enough to lick, by which perpetual loſs, the waſted skin is ever renewed. To theſe let us add the pattern of the *Tabernacle* ſhewed unto *Moſes* upon mount *Sinai*: The *Brazen Serpent* made by the expreſs command of God: the *Pattern of the Temple* (which *David* gave unto *Solomon*) after the form which God made with his own hand: *Ezekiel*'s portraict of *Jeruſalem* with its formal *Siege* upon a tile by expreſs command from God alſo: the *brazen ſtatue* of our Lord *Jeſus Chriſt* erected by the woman healed of the bloody Iſſue, as is mentioned by *Photius*, and *Aſterius* Biſhop of *Amaſa*, and other Eccleſiaſtick writers: the *Picture* alſo of our Lord made without hands, as it is related by *Damaſcenus Cedrenus* and others: the *Picture* of *Chriſt* in a napkin or towel, ſent by our Lord himſelf, unto *Augarus* King of *Edeſſa*; together with many more too tedious here to relate.

II. *By vertue of this divine hand it was that many Artiſts of old attained to a certain kind of perfection in theſe Arts.*

We will only refer the proof of this to the examples in the 31 of *Exodus* of *Bezaleel* and *Aholiab*; of whom God himſelf witneſſeth, that he called them by name

to

to make the *Tabernacle*; and filled them with his ſpirit, not only to deviſe curious works *in Gold, in Silver, in Braſs, and in Silk*; but alſo gave them skill to teach others the ſame.

III. *Nature alſo hath not been idle, but hath acted a maſter piece herein.*

To paſs by the glory of flowers, the excellent comlineſs of beaſts (as in the ſpots of *Leopards*, tails of *Peacocks* and the like) I will only remark the ſame of a Gem, which *Pyrrhus* (who made war with the *Romans*) had; of which *Pliny in lib.* 37. *cap.* 1. of his natural hiſtory, reports, that it being an *Agath*, had the *nine Muſes* and *Apollo* holding of a Lute depicted therein; the ſpots not by Art, but by nature, being ſo ſpread over the ſtone, that each Muſe had her peculiar mark. *See Gaffarel cap.* 5.

IV. *The care of Parents in the education of their children, was another reaſon of the progreſs hereof.*

The Grecians, ſaith *Ariſtotle in cap.* 3. *lib.* 8. of his Politicks, did teach their children the Art of Painting; and *Plutarch* ſaith, that *Paulus Æmilius* had Sculptors and Painters amongſt the maſters of his children, as well as Philoſophers and Rhetoricians: and *Pliny* ſaith, that by the Authority of *Pamphilus*, this Art hath been ranked among the liberal ſciences, and that only free-born children ſhould learn it. And *Galen* enumerating ſeveral arts as *Phyſick, Rhetorick, Muſick, Geometry, Arithmetick, Logick, Grammar and knowledge of Law*; add unto theſe, ſaith he, *Carving and Painting*. And as the Grecians were the firſt, that taught their children theſe Arts, ſo alſo they provided betimes for them choice maſters.

V. *Theſe maſters by their carefulneſs and vigilancy, not deceiving thoſe that put their truſt in them, became main pillars of theſe Arts, and propagated them to poſterity; which by the addition of conſiderable gifts and rewards had an honourable eſteem in the world.*

Their care was manifeſt in laying down ſolid principles of Art; of which *Quintilian in cap. 2. lib.* 12. of his Inſtitutions of Oratory ſaith, though vertue may borrow ſome forward hits of nature, yet ſhe muſt attain to perfection by doctrine. Their vigilancy was ſeen in watching, to apprehend their ſcholars capacities, that they might ſuit themſelves accordingly; as in *Tully*'s inſtance of *Iſocrates*, a ſingular good teacher, who was wont to apply the ſpur to *Ephorus*, but the bridle to *Theopompus*: And their reward was eminent, as *Pliny* noteth in *Pamphilus* his School, out of which *Apelles* and many other excellent Painters came, who taught no body under a talent (which is about 175 pound ſterling) thereby the better to maintain the Authority of Art.

VI. *Their practice exactly agreed with their precepts.*

As with *Seneca*, that labour is not loſt, whoſe experiments agree with Precepts; ſo with *Quintilian*, thoſe examples may ſtand for teſtimonies: And it was the practice of Painters of old, as *Galen* witneſſeth concerning *Polycletus*, who hath not only ſet down in writing the accurate precepts of Art; but alſo that he made a Statue according to the rules of Art contained in thoſe precepts.

VII. *Thoſe precepts which they taught their Scholars, they delivered in writing, that they might ever accompany them whereſoever they went.*

Apelles gave the precepts of this Art to his diſciple *Perſeus* in writing, as *Polycletus* did to his; beſides an innumerable others now in being too tedious here to recite. The like did theſe following, *Adæus Mitylenæus*, *Alcetas*, *Alexis* the Poet, *Anaſimenes*, *Antigonus*, *Ariſtodemus Carius*, *Artimon*, *Callixenus*, *Chriſtodorus*, *Democritus Epheſius*, *Duris*, *Eupherion*, *Euphranor Iſthmius*, *Hegeſander Delphicus*, *Hippias Eleus*, *Hypſicrates*, *Iamblicus*,

Iamblichus, *Juba* Rex Mauritaniæ, *Malchus Bizantius*, *Melanthius*, *Menæchmus*, *Menetor*, *Pamphilus*, *Polemon*, *Porphyrius*, *Praxiteles*, *Protogenes*, *Theophanes*, *Xenocrates*, and many others, the chief of whoſe works are now loſt.

VIII. *As Arts came now into eſtimation, ſo at length Laws were eſtabliſhed for their preſervation; and puniſhments for their prevarication.*

The beginning of theſe Laws was firſt at *Argos*, *Epheſus*, *Thebes* and *Athens*, as alſo in *Egypt*, where a workman (ſaith *Diodorus Siculus*) is ſeartully puniſhed, if he undertake any charge in the Common wealth, or meddle with any trade but his own: the which Law ſaith *Herodotus*, the *Lacedæmonians* did alſo approve of. By means of which Laws it was, that the Artiſts of thoſe nations attained to ſuch a perfection of Art, as we ſhall hereafter relate.

IX. *The fervent deſire, and love of emulation to excel others; the commendable ſimplicity of* Art; *together with the content and ſatisfaction of doing ſomething well, gave a large progreſs towards the advance of* Art.

It was nobly ſaid of *Scipio Africanus*, that every magnanimous ſpirit compares himſelf, not only with them that are now alive; but alſo with the famous men of all ages; whereby it appears that great wits are alwayes by the ſting of emulation, driven forwards to great matters; but he that by too much love of his own works, compares himſelf with no body, muſt needs attribute much to his own conceits. Doſt thou deſire the glory of ſwiftneſs? ſaith *Martial* (*in Epigr. 36. lib. 12.* ſtrive to out go the *Tyger*, and the light *Oſtrich*; it is no glory at all to *out-run* Aſſes. This *emulation* is the ſource of great wits, whereby our imitation is provoked ſometimes by envy, and ſometimes by admiration, whereby it falls out, that the thing we earneſtly ſeek after,

after, is ſoon brought to ſome height of perfection; which perfection conſiſts in exact imitation, according to the ſimplicity of Art, and not in gaudy appearances, which adorns the ſhadows much more than ever nature adorned the ſubſtance. This imitation of the life gave the *Artizan* fame; which fame quickened his aſpiring thoughts, adding more fuel to the flames, till ſuch time, as he brought forth a moſt abſolute work, whereby he conceived a joy, content and ſatisfaction, as durable as the work it ſelf, upon which he now conceives himſelf a happy man, and through a juſt affiance of his vertues knows himſelf to be lifted up above the reach of envy, where he ſtands ſecure of his fame, enjoying in this life (as if he were now conſecrated unto Eternity) the veneration that is like to follow him after his death; thus an honeſt *emulation* and *confidence*, bringing forth works of general applauſe, procureth unto its author an everlaſting Glory. Now what a comfortable thing is this, to have a fore-feeling of what we hope to attain to?

X. *Another reaſon of the Augmentation of theſe Arts, was the manifold uſes thereof among men, either for good or evil purpoſes.*

As in natural Sciences, where words come ſhort, a little picture giveth us the knowledge of beaſts, birds, fiſhes and other forms, as well inanimate as animate; In the *Tacticks*, how ſhould a General know how to ſet his men in array, unleſs he try the caſe by deſign or delineation? ſo in *Architecture* to pourtray platforms after any faſhion, and to work out the patterns of high and mighty buildings in a ltitle wax, keeping in ſo ſmall an example the exact proportion of the greater ſtructure: In *Geometry* the exactneſs of Lines, Angles, Surfaces and ſolids: In *Botonalogia*, the exact ſhapes of herbs, plants and trees: In *Zoologia*, the ſhapes of all living

living creatures: In *Anthropologia*, the exact description of all the parts of mans body both inward and outward; In *Chymia*, the forms of all chymical vessels and operations: In *the lives of illustrious men and Princes*, to express their forms and shapes to the life, that age might not prevail against them, deserving thereby (as *Varro* saith) the envy of the Gods themselves: In *Geography*, to describe in small maps Kingdoms, Countreys and Cities, yea the whole world: In *Policy*, as *Michal* in saving her husband *David*; *Ptolomæus* in the Image of *Alexander*, which he willingly let *Perdiccas* catch from him, supposing it to have been the body it self, thereby avoiding much blood-shed; *Cyrus* his wooden *Persians* in the Seige of *Sardis*, by which the townsmen being frighted, yielded the City; *Epaminondas* at *Thebes* by the Image of *Pallas* did wonders; *Amasis* King of *Egypt*, his golden Image made of the Basin, in which his feet used to be washed, which the *Egyptians* religiously worshiped, whereby he brought them to affect him being now a King, who was of an ignoble and base parentage; the *wooden Elephants* of *Perseus* King of *Macedonia*, with which he wonted his horses, that they might not be frighted in time of Battel. The Ornaments of Temples, Market places and Galleries, places both publick and private: *Julius Cæsar*'s Image in wax, hideous to look too, for twenty three gaping wounds he received, did mightily stir up the Romans to revenge his death. Worthy men which had deserved well of the world, had their memories conserved with their Images; by which all those that aspire to goodness, and to follow their steps, are likewise filled with hope. The *Athenians* have erected unto *Æsop* a most goodly statue, saith *Phædrus*, and have set a contemptible slave upon an everlasting base, *that all might understand, how the way of honour lieth open to every one, and that glory*

likewise

doth not ſo much follow the condition of our birth, as the vertues of our life. *Beroſus* excelled in *Aſtrology*, wherefore the *Athenians* for his divine prognoſtications, erected him a Statue with a golden tongue, ſet up in their publick Schools, as *Pliny* ſaith, *lib.* 7. *cap.* 37. Publick Libraries were furniſhed alſo with golden, ſilver and braſs Images of ſuch, whoſe immortal ſouls did ſpeak in thoſe places. The provocations of vices have alſo augmented the Art; it hath been pleaſing to engrave *wanton luſts* upon their cups; and to drink in *Ribauldry* and *Abominations*, as *Pliny* ſaith in the Proem of this 33 Book.

XI. *The uſe therefore of theſe Arts extending it ſelf ſo univerſally to all intents both in war and peace, it came to paſs that Artificers were honoured by all ſorts of men; which themſelves perceiving, did ſtill endeavour to encreaſe this enjoyed favour by a daily advance of their skill.*

By Kings they were honoured; for *Demetrius*, whileſt at the Siege of *Rhodes*, came to *Protogenes*, leaving the hope of his Victory to behold an Artificer. *Alexander* the Great came alſo to *Apelles* his ſhop, often accompanied with many Princes. It was his will that none but *Polycletus* alone, ſhould caſt his *Statue* in *Braſs*, that none but *Apelles* alone ſhould *paint* him in *colours*, that none but *Pyrgoteles* alone ſhould *engrave* him. The eſtimation of the Artiſts were alſo underſtood from the eſteem and high rates their works were prized at; a picture of *Bularchus*, a Painter, was valued at its weight in gold by *Candaules* King of *Lydia*: *Ariſtides* was ſo ſingular in his Art, that it is reported of King *Attalus* that he gave an hundred Talents (which is about ſeventeen thouſand and five hundred pounds ſterling) for one of his Pictures. As much had *Polycletus* for one of his. *Apelles* had for painting the picture of *Alexander* the Great, three thouſand and five hundred

dred pounds given him in golden coin. *Cæsar* payed to *Timomachus* eighty Talents, (about fourteen thousand pounds sterling,) for the Pictures of *Ajax* and *Medea*. Many more examples we might produce, but these may suffice; at length no price was thought equal to their worth: so *Nicias* rather than he would sell his picture called *Necyia* to King *Attalus*, who proffered him sixty Talents, (worth near eleven thousand pound sterling,) bestowed it as a present upon his Country.

XII. *Art meeting with such Successes, created a boldness in Artificers, to attempt even the greatest matters.* The great *Colosses* of the antients may serve here for an example: *Zeuxis* above all the rest, hath been admired for his boldness: *Euphranor* also excelled *Parrhasius* in this kind, in that the *Theseus* of the one so infinitely excelled the *Theseus* of the other. So great an excellency of Spirit arose in the old Artificers, as not to be daunted by the authority of those, who were like to censure their works: it was a great mark they aimed at, to avoid a preposterous shame or fear. And this they accomplished by taking care, not only to give them content, who must of necessity be contented with the work; but also that they might seem admirable unto them which may judge freely without controul. So they heeded to do well in the opinion of accurate and judicious spectators, rather than to do that which liked themselves. And therefore whatsoever is dedicated unto posterity, and to remain as an example for others, had need be well done, neat, polished, and made according to the true rule and law of Art, for as much as it is likely to come into the hands of skilful Artificers, judicious censurers, and such as make a narrow scrutiny into every defect. But as it is impossible to attain to an excellency, or height of any thing without a beginning, so do the first things in going on of the work seem to be the least; the height

of

of Arts, as of trees, delighteth us very much, ſo do not the roots; yet can there be no height without the roots. And therefore we ſhall find that a frequent and continual exerciſe, as it is moſt laborious, ſo it is moſt profitable; ſeeing *nature doth begin, hope of profit doth advance, and exerciſe doth accompliſh* the thing ſought after. In ſumm; by doing quickly, we ſhall never learn to do well: but by doing well, it is very likely we may learn to do quickly. To this ſpeedy and well doing there belongeth three things, *viz.* to add, to detract, and to change. To add or detract, requireth leſs labour and judgment; but to depreſs thoſe things that ſwell, to raiſe thoſe things that ſink, to tye cloſe thoſe things which are ſcattered, to digeſt things that are without order, to compoſe things that are different, to reſtrain things that are inſolent, requireth double pains: for thoſe things may be condemned, which once did pleaſe, to make way for inventions not yet thought of. Now without doubt, the beſt way for emendation is to lay by the deſign for a time, till it ſeem unto us as new, or anothers invention; leſt our own, like new births, pleaſe us too much.

XIII. Laſtly, *That which gave the greateſt and as it were the laſt ſtep towards the Augmentation of Art, was that free liberty which Artizans gave every one, to cenſure, to find fault with their works, and to mark their defects.*

It was the opinion of *Seneca*, that many would have attained unto wiſdom, if they had not conceived themſelves to be wiſe already. When *Phidias* made *Jupiter* for the *Eleans*, and ſhewed it, he ſtood behind the door, liſtning what was commended, & what diſcommended in his work: one found fault with the groſsneſs of his noſe, another with the length of his face, a third had ſomething elſe to ſay: now when all the ſpectators were

were gone, he retired himself again to mend the work, according to what was liked of the greater part; for he did not think the advice of such a multitude to be a small matter, judging that so many saw many things better than he alone, though he could not but remember himself to be *Phidias*. But yet Artificers did not from hence admit their judgments generally in every thing, but they followed their directions only *in such things as did belong to their Profession*. As when *Apelles* made a work, he exposed it in a place where all that passed by might see it; hiding himself in the meantime behind the Picture, to hear what faults were marked in his works, preferring the common people, before his own judgment. And he is reported to have mended his work, upon the *censure of a Shooe-maker*, who blaming him for having made fewer latchets in the inside of one of the Pantoffles, than of the other: the Shooe-maker finding the work the next day mended according to his advice, grew proud, and began to find fault with the leg also; whereupon *Apelles* could not contain himself any longer, but looking forth from behind the Picture, *bid the Shooe-maker not go beyond his last*; from whence at last came that Proverb. He is the best man that can advise himself what is fit to be done; and he is next in goodness, that is content to receive good advice: but he that can neither advise himself, nor will be directed by the advice of others, is of a very ill nature.

CHAP.

CHAP. XXVI.

Of Painting the Face and Skin.

1. *TWo wayes there be of adorning the Face and Skin; the first is, by Painting: the second is, by application of excellent Cosmaticks, which gives a most natural, absolute and lasting beauty.* The first way, which is that of Painting, is the subject matter of this Chapter.

Some may wonder, that we should meddle with such a subject as this, in this place; but let such know, the painting of a deformed face, and the licking over of an old, withered, wrinkled and weather-beaten skin, are as proper appendices to a Painter, as the rectification of his errors in a piece of Canvase; nor is there any reason but that the Artist should shew his care in the one, as well as his skill in the other, since a *single* deformity in the *body* begets a *complication* of miseries in the *mind*, and an *unity* of *defects*, a *multiplication* of evils. And though some think the Poets did not much amiss, to fancy the Creature to be hacht in *Hell*, by reason it brings with it such a torrent of dejections; yet let those darkened Souls (who are so much affrighted at its cloudy adumbrations) understand, that if it was conceived in *hell*, that *hell* was in the center of their conceptions: yet we confess, it seeks darkness, and only solaces it self in obscurity, and duskie solitudes. For such whose bodies have passed the stamp with some faults, and have missed the impressions or reflexions of beauty, which might make them delectable in humane society, ever make choice of *darkness* as their *chief companion*. *Deformity* is a disease esteemed the most pernicious

nicious, and its iſſue is a matter of dangerous conſequence, chiefly *obſtructions to Ladies Preferment.* Now to prevent this danger, to take away theſe obſtructions, and to deliver you from the embraces of ſo hideous a monſter (which ſome eſteem as a Furie of *Hell*) theſe *Coſmeticks* we have offered upon the *Altar* of your defects; proteſting that the uſe of theſe beautifiers, will make you as fit for the entertainment of Courtiers, as ever you were before for the courtſhip of *Grooms* or *Hoſtlers*, and make your *ruſty skins* and *ill-look'd faces*, to out-ſhine with a radiant luſtre, the moſt ſplendid of all the *Nymphs* of *Diana*. Though you may look ſo much like the Image of death, as that your skins might be taken for your winding ſheets, yet by our directions you may attain ſuch a roſid colour, and ſuch a lively chearfulneſs, as ſhall not only make you look like natures workmanſhip, but alſo put admiration into the beholders, and fix them in a belief, that you are the firſt-fruits of the reſurrection. Thus we teach you *lippid mortals* to retrace the ſteps of youthfulneſs, and to transform the wrinkled hide of *Hecuba*, into the tender skin of the Greateſt of beauties; which then you will dull by the advance of your features, and make all conceited ſhadows of glory, to vaniſh in your preſence. When once your artificial heat ſhall appear, others ſhall ſeem pale with envy for your perfections; and their *natural ruddineſs* ſhall only ſerve them to *bluſh*, to ſee their features clouded by your ſplendor, who will ſeem like brown bread compared with Manchet, or rather like wooden diſhes upon a ſhelf of China ware, or as another once ſaid, like blubberd jugs in a cupboard of Venice glaſſes, or as earthen piſs-pots in a Goldſmiths ſhop. By this means, your ſparkling Glories ſhall fire *Platonick* Lovers, ſo that none though as cold as *Saturn*, ſhall be able to reſiſt your

actuating flames, but ſhall force the ſtouteſt heart, to be a *Sacrifice to love*. If any remain unſcorched, it muſt be only thoſe leaden hearted *Cowards*, who dare not *approach* your flames, for fear of *melting*; or thoſe undeſerving ſoldiers of *Venus* (of a frigid conſtitution) who dare not ſo much as *look* upon your youthful fire, for fear of being burnt to aſhes. But it may chance that ſome *Saint* or another, may condemn your *heart* for *evil*, becauſe you ſtrive to make your *faces good*, and may like your *in-ſide* the *worſe* becauſe your *out-ſide* may look *ſo well*; yet with *Benjamin* refuſe not the many meſſes of Pottage, nor yet the many change of Raiment (although one might well enough ſerve your turn) but receive them from the hands of *Joſeph*, though all the reſt of the Brethren be angry. Avoid not company for want of beauty, when art affords an innocent ſupply, but with *confidence* crucify that evil conſcience, which forbids the uſe of a little oyl to make a chearful countenance, and the drinking of a little wine to make a merry heart. Borrow our Artificial beautifiers, and become *ſplendid*, that you may be fit to be gathered by the hand of ſome metamorphoſed *Hero*; leſt in the garden of *Deformities*, growing *green* with *ſickneſs*, you ſhould be taken for *thiſtles*, and ſo crop'd by *Aſſes*.

II. *To cleanſe the face and skin.*

Before any thing be uſed to paint, or make the skin beautiful, it muſt be made very clean thus: firſt waſh with warm water, and ſweet ſcented waſh-balls very well; then rub the face with a cloth, and waſh well with water in which Wheat-bran is boiled; ſo is the skin prepared.

Or thus, Take *Sublimate* one ounce, glair of ſix eggs, boil them in a glaſs veſſel, till they grow thick; then preſs out the water, with which waſh the skin.

III. *To*

III. *To make a white Fucus or Paint.*

Take Talk and powder it, by beating of it in a hot mortar, to the powdred Talk add diſtilled Vinegar, boil it at a gentle fire in a wide glaſs, let the fat froth that ſwims at top, be taken off with a ſpoon; then evaporate the vinegar, and mix the remaining cream with flegm of common Salt, or a little *Pomatum*, with which waſh or anoint the face, and it will beautify it much.

IV. *Another very excellent.*

Take Crude Talk in powder one ounce, oil of Camphire two ounces, digeſt till the oil is white; it is a noble *Fucus* for Ladies faces.

V. *To make the aforeſaid oyl of Camphire.*

Take Camphire four ounces, Bole twelve ounces, make them into balls and dry them in the Sun, then diſtill them in ſand in a glaſs retort, into a receiver that hath diſtilled rain water therein: firſt there will come forth a white matter, which melts in the Alembick, and falls into the receiver, then a clearer water; and at laſt with a ſtronger fire, the oil we ſpeak of, ſweet ſcented, which rectified with ſpirit of wine will be yellow as Gold.

VI. *Another excellent Fucus made of Pearl.*

Diſſolve Pearl in diſtilled Vinegar; precipitate with oyl of *Sulphur per Campanum*; then ſweeten and digeſt with ſpirit of wine; abſtract the ſpirit, and you have a magiſterial *Fucus* will melt like butter.

VII. *To make the beſt Fucus or Paint as yet known.*

Take Venetian Talk, cleave it into ſlices, digeſt it in the heat of the Sun, or of a horſe-dunghil for a month, with diſtilled vinegar, made of Spaniſh wine, adding every day new diſtilled Vinegar to the former, till the Vinegar be mucilaginous; which then diſtill by a luted retort and a large receiver with a na-

ked fire. First there comes forth the Vinegar; then a white oil, which separate. After you have cleansed the skin by the second Section, then first wash with the vinegar, after anoint with the oil: if the face be first well wash'd from all impurity, this one anointing may hold for a month without fading. *This Cosmetick if rightly prepared, is worth about five pound an ounce.*

VIII. *An excellent Fucus made of a Bulls gall.*

Take Bulls galls dryed in the Sun, whose tincture extract with spirit of wine, with which besmear the face, (being cleansed by the second Section) leaving it on for three or four days, without going abroad, or exposing the skin to the air: at the end of the time cleanse the face by the second Section: so almost to a miracle, the skin of the face and neck is rendered most gratefully white, soft, delicate and amiable. This is the *Spanish Fucus* which several Ladies now use.

IX. *To make an excellent red Fucus.*

Make a decoction of red Sanders in double distilled vinegar, adding a little Alom, with a few grains of Musk, Amber-grise, or of some sweet Spices, and you will have a perfect red *Fucus* for the face.

X. *Another very excellent.*

Take juice of Clove-gilliflowers, with which mix a little juice of Limons: with this paint your face, and you shall have a pleasing red colour.

XI. *To do the same another way.*

Make a strong infusion of Clove-gilliflowers in rectified spirit of wine, adding a few drops of oil of Vitriol; or instead thereof a little Alom, and the juice of a Citron or Limon; so shall you have an excellent colour to beautifie the face with.

XII. *A Fucus or Paint not easie to be discovered.*

Take seeds of Cardamoms or grains of Paradise, Cubebs, Cloves, and raspings of Brazil, which infuse in rectified

rectified ſpirit of wine for ten days, over a gentle heat; then ſeparate the ſpirit: this is ſo perfect a Fucus, that it may deceive any man, for this clear water gives a freſh, red, and lovely colour which will laſt long.

XIII. A *Fucus or Coſmetick of river Crabs.*

Takes of the fleſh which remains in the extremities of the great claws of river Crabs (being boiled) a ſufficient quantity, which dry gently, and then extract a deep tincture with rectified ſpirit of wine; evaporate part of the *menſtruum*, till the tincture have a good thickneſs or body; with which (the skin being cleanſed) anoint the cheeks firſt, applying over it ſome other albifying Coſmetick.

XIV. *Spaniſh wool, wherewith women paint their faces red.*

Boil ſhearings of Scarlet in water of quick-lime half an hour, of which take two pound, to which put Brazil two ounces (raſped) Roch Alom, Verdigrieſe, of each one ounce, Gum Arabick two drcahms, boil all for half an hour, which keep for uſe.

XV. *To do the ſame another way.*

Take Spirit of wine one pound, Cochenele half an ounce, raſped Brazil one ounce, Gum Armoniack three drachms, mix and digeſt till the Gum is diſſolved; then boil it gently, and ſtrain it for uſe, into which you may put old linnen rags, or Spaniſh wool at pleaſure.

CHAP. XXXVII.

Of Coſmeticks which beautifie without any thing of Paint.

I. A *Nexcellent Coſmetick or Liquor of Talk.*

Take powder of Talk (made by rubbing it with pumice ſtones; or beating it in a very hot mortar; or filing it with a Goldſmiths ſmoothing file) eight

ounces, *Salis Tartari* ſixteen ounces, calcine it twelve hours in a wind furnace, and ſet it in a Cellar, ſeparating that which melts, from that which doth not: then calcine this dry Calx added to four times its weight of Sal nitre, with a ſtrong fire, ſo the Talk will be melted into a clear white maſs which being ſet in a Cellar will turn to a clammy liquor.

This wonderfully whitens and beautifies the skin, and takes away ſpots and freckles from the face: but you muſt not leave the liquor long on, but waſh it off with decoction of wheat bran, that it corrode not the skin.

II. *To make the skin ſoft and ſmooth.*

The face being very clean by the ſecond Section of the ſix and thirtieth Chapter, waſh it very well with a *Lixivium* of Salt of Tartar, and after that anoint it with *Pomatum*; or which is better, oil of ſweet Almonds, doing this every night going to bed. The *Pomatum* we have taught the way to make in our *Synopſis Medicinæ, lib. 3. cap. 58. Sect. 2.*

III. *A water to cleanſe the face from Scurfe and Morphew.*

Take diſtilled rain water ſix ounces, juice of Limons twelve ounces, mix them, and waſh with it morning and evening, anointing after it at night going to bed with the oil or Pomatum aforeſaid.

IV. *An Unguent which brings the skin to an exquiſite beauty.*

Take of our *Pomatum* one ounce, Salt of Tartar one drachm, Musk twenty grains, mix them well, and (the face or skin being very clean) anoint morning and evening.

V. *A wonderful Coſmetick of great worth.*

Take white Tartar twenty ounces, Talk, Salt, of each ten ounces, calcine them in a potters furnace very well; then grinding the matter upon a marble, put it into

into *Hippocrates* his ſleeve, and ſet it in a Cellar or other moiſt place for twenty or thirty dayes, and there will drop from it a precious oil; which being rubbed upon the skin ſoftly with a linnen cloth (the skin being duly cleanſed firſt) takes away all kind of ſpots, and makes the skin ſoft and delicate.

VI. *A cheap, yet excellent Coſmetick.*

Take Alom in fine powder, and ſhake it with whites of new laid eggs, being a little heated, till ſuch time as they grow thick to an ointment, with which anoint the face morning and evening three or four days; and it will take away ſpots and wrinkles, and make the skin grow clear and fair.

VII. *An excellent Mercurial Coſmetick prevalent againſt moſt deformities of the skin.*

Take Mercury purified from all blackneſs half a pound, Mercury *Sublimate* in powder as much, mix them in a ſtone or marble mortar; put them into an Alembick of a ſtraight Orifice, put on diſtilled Vinegar, till all be covered three or four fingers, letting it ſtand four dayes, daily ſtirring the ſame at certain times, then it extracts a whitiſh powder; the whitiſh Vinegar by inclination ſeparate, rejecting it, and put on other Vinegar: the powder at bottom keep ſo for ſome days: which labour you muſt ſo often reiterate, till you have abundance of that white powder, which dry, and keep for uſe: anoint with it, by mixing with it a little diſtilled rain water, and it will take away all blemiſhes of the skin, as alſo Tetters. Uſe it not too often, and beware you touch neither eyes nor teeth with it.

VIII. *Another of great eſtimation.*

Take Mercury *Sublimate*, *Saccharum Saturni* of each two drachms, Roſe water, juice of Limons of each two ounces, mix them like to an ointment, with which anoint gently at night, and the next morning with the Pomatum aforeſaid.

IX. *To make a kind of Lac Virginis, an excellent Cosmetick.*

Take distilled rain water a quart, *Saccharum Saturni* crystallized one ounce, mix them, and then wash with the water, being settled: the fine white powder at bottom, is also an excellent fucus or paint, which may be laid upon the skin if very clear: note, some use Vinegar instead of the rain water.

X. *To make Oleum Tartari per deliquium.*

Take Salt of Tartar, which put into a bag with a corner in a moist Cellar, and the oil will distil therefrom in drops: with this oil you may mix a little fair water, and wash your face at night going to bed; and the next morning, the face being very clean, you may wash with the aforesaid Lac Virginis; thus continuing for some days, you may create an exquisite and lasting beauty.

XI. A *compound Cosmetick esteemed by some of great force.*

Take of the aforesaid *Lac Virginis* one ounce, oil of Tartar aforesaid half an ounce, mix them, with which wash morning and night for about a week or more, as you shall see occasion; then anoint with the following ointment.

XII. *To make the Cosmetick Ointment aforesaid.*

Take Musk three drachms, Ambergriese two drachms, Civit one drachm, grind them upon a porphyre or marble stone, with oil of Ben and Rhodium of each three ounces, with which anoint as aforesaid: note, some instead of the oil of Ben, use oil of sweet Almonds.

XIII. A *vegetable Cosmetick.*

Besmear your face or skin at night going to bed, with the juice of Wake Robin; it is excellent.

XVI. *An incomparable Cosmetick of Pearl.*

Dissolve Pearls in juice of Limons or distilled Vinegar

Vinegar, which digeſt in Horſe-dung, till they ſend forth a clear oil, which will ſwim on the top: this is one of the moſt excellent Coſmeticks or Beautifiers in the world: *this oil if well prepared is richly worth ſeven pound an ounce.*

XV. A *Coſmetick ointment of great worth.*

Take of our *Pomatum* aforeſaid ſix ounces, *Saccharum Saturni* two ounces, mix them, and anoint morning and evening.

XVI. A *nother very good for the skin.*

Mix *Saccharum Saturni* one drachm, in Vinegar half an ounce, which mingle with the glair of eggs, and anoint with it.

XVII. A *Coſmetick wonderful to make a pleaſing ruddy complexion.*

Take oil of Tartar four ounces, Alom, Sal Gem, of each one ounce, Borax, Camphire of each half an ounce, beat them well together, to which add of Briony water a pint, diſtil them in balneo, and you will have your deſire.

XVIII. A *nother for the ſame.*

Take Madder, Myrrh, Saffron, Frankincenſe, of each alike, bruiſe and ſteep all in White-wine, with which anoint the face going to bed, and in the morning waſh it off, and the skin will have a gallant pleaſing bluſh.

XIX. *To make the Coſmetick of Myrrh, very excellent.*

Boil eggs till they are hard, ſlit them and take out the yolks, fill them up with powdred myrrh, cloſe them together, and lay them in a moiſt Cellar, and the myrrh will diſſolve into oyl.

XX. *To make a very good Waſh to whiten the skin, and give a good complexion.*

Take Limons, hens eggs boiled, of each twelve,

Tur-

Turpentine eight ounces, diſtil all in *Balneo Mariæ*, with which waſh: when you waſh, you may drop into it a drop, two or three of oil of Oranges or Cinamon, for fragrancy ſake.

XXI. *A Coſmetick to make a rough skin ſmooth.*

Take ſweet Almonds blanched four pound, moiſten them with ſpirit of wine and roſe water mixt together, of each two ounces, beat them together and fry them; and when they begin to ſmoak, put them into a bag, and preſs them (in a preſs made for that purpoſe) and there will come forth a very clear oil; which put into rain water, and beat it till it is exceeding white.

CHAP. XXXVIII.

Of Coſmeticks, which remedy the various Vices of the skin.

I. *To take away Sun-burnings.*

To glair of ten eggs put Sugar-candy one ounce and anoint with it going to bed: or anoint with the juice of Sow-bread at night going to bed; & in the morning with oil *Omphacine.* The like effects hath our *Lac Virginis* at the ninth Section of the ſeven and thirtieth Chapter, as alſo *Oleum Tartari*, and other things of like nature.

II. *To take away redneſs and Pimples.*

Firſt prepare the skin by bathing it often with the decoction of wheat-bran, and applying pultiſſes of bread, milk and oil thereto: when the skin is thus ſuppled and rarified, you may cure them either by our liquor of Talk at the firſt Section of the ſeven and thirtieth Chapter,

Chapter, or mercurial Coſmetick at the ſeventh Section of the ſeven and thirtieth Chapter, or our *Lac Virginis* and oil of Tartar at the ninth and tenth Section of the ſeven and thirtieth Chapter, or by often waſhing with juice of Limons.

III. *To take away Freckles.*

Take juice of Limons, put it into a glaſs bottle, to which put fine Sugar and *borax* in powder, digeſt it eight dayes in Sand, then uſe it; or mix *Sal Tartari* with whites of eggs, and apply it; or often uſe our compound Coſmetick at the eleventh Section of the ſeven and thirtieth Chapter, or oil of Tartar alone, for ſome weeks; but if all fail, you muſt have recourſe to our Liquor of Talk at the firſt Section of the ſeven and thirtieth Chapter, or Mercurial Coſmetick at the ſeventh Section of the ſeven and thirtieth Chapter.

IV. *To take away Spots from the face or skin.*

This is done by anointing with oil of Tartar for ten days; and after all that to waſh it with a *Lixivium* of *Quicklime* in which *Sal armoniack* hath been diſſolved for a long time: or you may uſe the Coſmetick at the third Section of the ſeven and thirtieth Chapter camphorated.

V. *To cleanſe a ſcurffy Skin.*

If the creature be fat, foment firſt with a *Lixivium* of Salt of Tartar; but if lean, make a fomentation of Borrage, Bugloſs and Mallow leaves, which uſe for ſome days: this being done, bath the place where the ſcurff is, with *Spiritus Nicotianæ* made by fermentation, which being dryed in, anoint firſt with oil of Tartar, then with oil of Almonds; repeating the three laſt works, ſo often till the ſcurff goes away.

If all theſe fail, you muſt have recourſe to our liquor of Talk, or Mercurial Coſmetick; or thoſe at the fifth and eighth Section of the ſeven and thirtieth Chapter, which with-

without doubt will peform your desire.

VI. *To free the Skin from Tetters and Ring-worms.*

Dissolve *Sublimate* one ounce in a glass of Red-wine by boiling, with which wash the place morning and evening, letting it dry of it self, for three or four days together, and it will certainly cure: if they be not inveterate, our liquor of Talk at the first Section of the seven and thirtieth Chapter, or Mercurial Cosmetick may sufficiently do; or you may anoint with this ointment. Take *Sal Tartari* two drachms, burnt Alom three drachms, powder and incorporate with whites of eggs: or this, take *Sulphur vive* three drachms, Camphire one drachm, Hogs-grieſe two ounces, mix and make an ointment.

VII. *To take away wrinkles from the Skin.*

Take oil of Almonds, lees of oil Olive, and make them into an ointment with wax, powder of Camphire and Mastich, with which anoint. Oil of Myrrh to anoint with, is eminent in this case: or wash with a decoction of Briony roots and figs of each alike: or dissolve Gum Tragacanth in *Lac Virginis*, and wash with that. Excellent good is a strong decoction of Pomegranate pills in White-wine, to wash often with.

VIII. *To take away Warts.*

The juice of the greater Spurge with Salt anointed, takes them away, so also a continual washing with a Lixivium of Quicklime and Salt of Tartar. The juice of *Verrucaria* performs the same. A plaister of *Cantharides* with a defensative is very good in this case: so also this following wash: take *Saccharum Saturni* three ounces, *Sal Armoniack* one ounce, Vitriol common six drachms, Quicklime eight ounces, boil all in water four pound to the consumption of the half, with which often bath the warts, and then wash with our Mercurial water.

water. Black Soap hath often been found very good; but eſpecially a plaiſter of Turpentine.

IX. *To heal Chaps in the Skin.*

Our *Pomatum* in this caſe is moſt excellent: yet this following is commendable. Take Capons grieſe mixed well with Camphire, and anoint with. Oil of Turpentine two drachms, mixed with *Unguentum Populeon* two ounces, is very good. So alſo oil of Roſes mixed with Sheep Suet and wax to an ointment.

X. *To heal Burnings and Scaldings.*

Excellent good is the *Unguentum Rubrum* in our *Synopſis Medicinæ lib.*3.*cap.*§8.*Sect*1. both to draw out the fire, and to heal. To draw out the fire alſo, glair of eggs mixed with Roſe water, is very prevalent: ſo alſo is Salt, raw Onions, Soap, Yeſt, Oil of Tartar and the like. To hinder the riſing of the bliſters, Hens dung three ounces, mixed with hogs grieſe four ounces, and Salt of Tartar one ounce is very good; ſo alſo a cataplaſme of Honey and crums of bread; but beſt of all a plaiſter of ſtrained *Opium*, which performs all the intentions to admiration. If the bliſter break, it may be preſently skinned by anointing with oil of eggs, and waſhing often with *Lac Virginis*, ſtrewing upon the ſore, powder of Bole, Tutty, Ceruſe or the like.

XI. *To take away ſcars and marks of the Small Pox.*

Take of oil of Tartar one ounce and half, Ceruſe diſſolved in oil of Roſes one ounce, *Borax* and *Sal Gem* of each one drachm, mix and make an ointment, with which anoint. Oil of Tartar alone performs this work well: ſo Salt of Tartar, mixed with powder of Mirrh and oil of Roſes.

XII. *To beautifie the Hands.*

To make them ſoft, often anoint with the oil of Almonds or our *Pomatum* at night going to bed, waſhing them

them the next morning with decoction of wheat-bran: after a while wash them with Salt of Tartar, dissolved in fair water, perfumed with oil of Cloves, Oranges, Rhodium or Cinnamon. Or this, take Venice Soap dissolved in juice of Limons one pound, Virgin-honey four ounces, Sublimate, Orice root, Sugar, Salt of Tartar, Alom, Borax of each one ounce, Balsom of Peru two drachms, oil of Cloves one drachm, oil of Rhodium and Cinnamon of each half a drachm, make a mixture to wash the hands withal: Or this, take powder of Venice Soap one pound, Orice root eight ounces, *Amylum* six ounces, mix them and make an ointment with *liquid Storax* and oil of *Benjamin* a sufficient quantity; it wonderfully whitens, smooths and sweetens the hands. To anoint also with a Bulls gall is very good.

XIII. *To help hands which are swoln, and look red or blew with cold.*

What we even now said (in the last Section) may be said again here: to which we add, that a long bathing of them in a larther of Castle Soap, is very good if it be done: or if a repercussive plaister be applied made of barley meal, *Saccharum Saturni*, and oil of Myrtles; washing (after the coming off of the Cataplasme) with juice of Limons or white wine Vinegar: a plaister of Turpentine mixed with Salt is good. Often to anoint the hands with oil of Roses, Almonds, or *Pomatum* at night, and the next morning with the *Lac Virginis* prevails much. Oil of Anniseeds, Caraways and Fennel prepared chymically, as also Cloves and Oranges, mixed with oil of Almonds and often used, are eminent above all other things.

CHAP.

CHAP. XXXIX.

Of making a Sweet Breath.

I. A *Stinking Breath comes from one of theſe four cauſes, viz. putrified Lungs, defective Teeth, a diſtemper of the Head, or obſtruction of the Stomach.*

II. *To remedy a Stinking Breath coming from putrified Lungs.*

Take *Unguentum Nicotianæ* one ounce, *Oleum Succini* two drachms, mix them and anoint the breaſt outwardly; inwardly give cleanſers, (as oil of Sulphur allayed with Roſe water) morning and evening; as alſo *Antimonium Diophorticum* ten grains five times a day for ſeveral days together; then heal by giving oil of Almonds mixed with a few drops of oil of Cinnamon, or Pills of Turpentine: Laſtly, morning, noon and night let this bolus be adhibited; take Nutmegs, Mace, Ginger, of each fifteen grains, honey two drachms, oil of Cinnamon ten drops, mix them, and continue it for ſome weeks.

III. *To help the defects of the teeth.*

1. *If the teeth be furred over*, rub them every morning with *cremor Tartari* in powder, and waſh them with White-wine. 2. *If the teeth be black*; allay oil of Sulphur or Vitriol in Roſe water, and ſcowr them well therewith, with the end of a ſtick and a rag, till all the blackneſs be gone; then rub them with oil of Almonds perfum'd with oil of Cinnamon. 3. *If the teeth be looſe*, firſt rub them with this powder, take Galls, Pomgranate flowers, Sumach, Cyperus, of each one ounce, Roch Alom half a pound, powder them all for uſe: then uſe this Gargariſme. Take Galls one ounce,

Myrrh,

Myrrh, Pomgranate peels of each half an ounce, boil them in white wine vinegar for a Gargariſm. Laſtly, morning, noon and night waſh the gums with good red Wine; by this means the teeth will be faſtned and the gums reſtored. 4. *If they be in danger of rotting*; take aſhes of Harts-horn, magiſtery of Corral of each one ounce, muſk, or inſtead thereof oil of Cinnamon, ten grains, mix for a dentifrice to rub the teeth withal, it will keep them white and ſound. 5. *If they be rotten and hollow*; make little pellets of ſtrained Opium, Myrrh and oil of Cinnamon, and put them into the hollow tooth. 6. *If they ach*; uſe the aforeſaid pellets, or make little ones of *Laudanum Paracelſi*, and put them into the hollowneſs: or if they be not hollow, tye a little pill of the ſame up in a fine thin rag, and hold it between the aking teeth. 7. *If they ſtink*; often waſh them with wine or ſpirit of wine, in which a few drops of oil of Cinnamon and *adeps Roſarum* is diſſolved.

IV. *To rectify a Stinking Breath ariſing from diſtemper of the head.*

Conſider the cauſe of the diſtemper, whether it ariſes from the Pox, Impoſthumes, or the like, and follow the method inſtituted in the Cure of thoſe diſeaſes, and then the cauſe being taken away, the effects you will find will ſoon ceaſe; yet nevertheleſs theſe following pills are excellent: take *Calx* of refined Silver made by ſpirit of Nitre, and well dulcified by waſhing in warm rain water one ounce, *Reſinæ Scammonii* one ounce and half, mix them for a maſs of pills, of which take eight or ten grains at night going to bed every third, fourth or fifth day.

V. *To rectifie a Stinking Breath ariſing from the obſtruction of the Stomach.*

This is done by opening and cleanſing the Stomach thus.

thus. Take every morning going to bed half a drachm of *Pil. Ruffi* for ten or twelve days together: or thus, firſt vomit with *Vinum Benedictum* one ounce or more, according as Strength requires, twice or thrice; then take *Pilulæ Rudii* halfa drachm at a time, in the morning faſting, drinking after it ſome warm broth or poſſet drink, which repeat every third or fourth day four or five times.

VI. *To rectifie the Breath, when it ſmells of any thing that is eaten.*

Chew Coriander ſeed or Zedoary in the mouth, drinking a good draught of wine after; the ſcent of the wine is taken away by eating four apples or Quinces, or by chewing troches of Gum Tragacanth perfumed with oil of Cinnamon.

CHAP. XL.

Of beautifying the Hair.

I. *TO Dye the Hair black.*

This is done with the *Calx* of *Lime* (made by Spirit of Nitre) mixed with fair water, and the hair waſhed therewith, with a Spunge: it is the moſt excellent thing of that kind that is yet known.

II. *To keep the hair from falling off.*

Take Myrtle berries, Galls, Emblick Myrobalans of each alike, boil them in oil Omphacine, with which anoint: it is an excellent Medicine, yet as old as *Galen.*

III. *To remedy Baldneſs.*

This is a hard thing to cure, yet the following things are very good. Rub the head or bald places every morning very hard with a courſe cloth, till it be red, anointing immediately after with Bears grieſe: when

ten or fifteen days are paſt, rub every morning and evening with a bruiſed Onion, till the bald places be red, then anoint with honey well mixed with Muſtard ſeed, applying over all a plaiſter of *Labdanum* mixed with mice dung, and powder of Bees: do this for thirty days. If all the former fail, bath with a decoction of Bur-dock roots, made with a Lixivium (of Salt of Tartar) two parts, and muskadel one part; immediately applying this Unguent: take *Thapſi* or *Turbeth* one drachm (in powder) bears grieſe one ounce, mix them, which uſe for ſixty days; if this make not the hair come, the defect is incurable.

IV. *To take away hair from places where it ſhould not grow.*

Take Quicklime four ounces, *Auripigmentum* one ounce and a half, *Sulphur vive*, Nitre, of each half an ounce, *Lixivium* of Salt of Tartar a quart, mix and boil all ſo long in a glazed earthen pot, till putting a quill therein, all the feathers peel off, and it is done. Firſt foment the place with warm water a little before you uſe the aforeſaid medicine; a quarter of an hour after waſh with very hot water; then anoint with the aforeſaid Unguent, and in a quarter of an hour it will do the work: when the hairs are faln away, remember to anoint with oil of Roſes; now to keep them from ever growing again, anoint for ſome days with an ointment made of the juices of Henbane and Nightſhade, *Opium* and Hogs grieſe.

V. *To make the hair curl.*

Waſh the hair very well with a *Lixivium* of Quicklime, then dry it very well, that done anoint it with oil of Myrtles, or oil *Omphacine*, and powder it well with ſweet powder, putting it up every night under a cap: if the party be naturally of a cold and moiſt conſtitution, the waſhing, anointing and powdring muſt be perpetually

perpetually uſed once or twice a week during life, the hair being put up every night.

VI. *To make hair lank and flag that curls too much.*

Anoint the hair throughly twice or thrice a week with oil of Lillies, Roſes, or Marſh mallows, combing it after it very well.

VII. *To make the hair grow long and ſoft.*

Diſtil Hogs grieſe or oil Olive in an Alembick; with the oil that comes there-from anoint the hair, and it will make it grow long and ſoft: uſe it often.

VIII. *To preſerve the hair from ſplitting at ends.*

Anoint the ends thereof, with oil Omphacine, or oil of Myrtles, they are eminent in this caſe to preſerve the hair from ſplitting, ſo alſo an ointment made of Honey, Bees wax and oil Omphacine or Bears grieſe.

CHAP. XLI.

Of the Art of Perfuming in general.

I. IN this Art two things are to be conſidered, *viz.*
1. The way and manner of making of Perfumes.
2. The way and manner of Perfuming.

II. The Perfume it ſelf is conſidered, 1. In reſpect of its Form. 2. In reſpect of its Compoſition.

III. The Form of the Perfume is either Water, Oil, Eſſence, Unguent, Powder, or Tablets.

IV. The Making and Compoſition is taken from the Form and matter.

V. The Matter is either Vegetable, Animal or Mineral.

VI. The way of Perfuming is according to the matter to be perfumed.

VII. The matter to be perfumed is either natural, as Hairs, Skins, Cloaths, Air, &c. or Artificial, as Pomanders, Powders, Wash-balls, Soaps, Candles, and other things of like nature.

CHAP. XLII.

Of the Matter of which Perfumes are made.

I. THe ground of *Vegetable* Perfumes, is taken from *Flowers, Seeds, Herbs, Roots, Woods, Barks* and *Gums.*

II. The chief *Flowers* for this use, are of Clove-Gilliflowers, Roses, *Jasemin*, Lavender, Oranges and Saffron.

III. The chief *Seeds* or fruits are Nutmets, Cloves, Carrawaies, Grains, Seeds of *Geranium Moschatum*, and the Nut Ben.

IV. The chief *Herbs* are *Geranium Moschatum*, *Basil*, sweet Majoram, Tyme, Angelica, Rosemary, Lavender, Hyssop, sweet Trefoyl, Mint and Bay-tree leaves.

V. The chief *Roots* are of *Calamus Aromaticus*, Ginger, China, *Caryophyllata*, Indian Spicknard and sweet Orrice or Iris.

VI. The chief *Woods* are of yellow Sanders, *Xylobalsamum*, *Lignum Aloes*, and *Rhodium.*

VII. The *Barks* and *Peels* are of Cinnamon, Mace, Oranges, Limons and Citrons.

VIII. The chief *Gums* are Frankincense, *Olibanum*, Labdanum, Styrax, liquid Styrax. *Balsamum Verum*, Ambergrice, *Styrax Calamita*, Benjamin, Amber, Camphire.

IX. The chief matters of Perfumes taken from *Animals*, are Musk, Zibet, Cow-dung and other turds.

IX. Of

X. Of *Minerals* there is one only, which yields a Perfume, and that is *Antimony*.

CHAP. XLIII.

Of the Oil of Ben.

I. THe little Nut which the Arabians call *Ben*, is the ſame which the Latins call *Nux Unguentaria*; and the Greeks *Balanos Myrepſta*; out of which is taken an Oil, of great uſe in the Art of Perfuming.

II. *To make the Oil of* Ben. Blanch the Nuts, and beat them very carefully in a mortar, and ſprinkle them with wine, put them into an earthen or Iron Pan, and heat them hot, then put them into a linnen cloth, and preſs them in an Almond preſs; this work repeat, till all the Oil is extracted, ſo have you Oil of *Ben* by expreſſion.

III. In like manner you may expreſs the Oil out of Citron ſeeds, incomparable for this purpoſe, to extract the ſcent out of Musk, Civit, Amber and the like, becauſe it will not quickly grow rank, yet Oil of the *Nut Ben* is much better.

IV. This *Oil* of *Ben* hath two properties; the one is, that having no ſcent or odour of it ſelf, it alters, changes or diminiſhes the ſcent of any Perfume put into it: the other is that it is of a long continuance, ſo that it ſcarcely ever changeth, corrupts or putrifies, as other Oils do.

V. To make a Perfume thereof, put the Musk, Amber, &c. in fine powder thereinto, which keep in a glaſs bottle very cloſe ſtopped, for a month or more, then uſe it.

VI. Or thus, Blanch your Nuts, and bruiſe them, (Almonds may do though not ſo good) and lay them between two rows of Flowers, ſuppoſe Roſes, *Jaſemin*, &c. or other Perfumes; when the Flowers have loſt their ſcent and fade, remove them, adding freſh ones; which repeat ſo long as the Flowers are in ſeaſon; then ſqueez out the oil, and it will be moſt odoriferous.

VII. Laſtly, by this laſt you may draw a ſweet ſcent out of thoſe Flowers, out of which you cannot diſtil any ſweet water.

CHAP. XLI.

Of ſweet Waters.

I. *The firſt ſweet Water.*

Take Cloves in powder two drachms, yellow Sanders, *Calamus Aromaticus* of each one ſcruple, *Aquæ Roſarum Damaſcenarum* fifteen pound, digeſt four days, then diſtil in an Alembick; to this new diſtilled water put in powder Cloves, Cinnamon, Benjamin, *Storax Calamita* of each one drachm, diſtil again in *Balneo*; laſtly put the water into a glaſs bottle with Musk and Ambergrieſe of each ten granis, keep it cloſe ſtopt for uſe.

II. *The ſecond ſweet Water.*

Take Damask Roſes exungulated three pound, Flowers of Lavender and Spike of each four ounces, Clove-gilliflowers, and Flowers of *Jaſemin*, of each two pound, Orange-flowers one pound, Citron peels four drachms, Cloves two drachms, Cinnamon, *Storax Calamita*, Benjamin, Nutmegs, of each two ſcruples all in powder, *Aquæ Roſarum* ſix pound, digeſt ten days,

days, then diſtil in *Balneo*: to the diſtilled water add of Muſk and Ambergrieſe of each thirty grains.

III. *The third ſweet water.*

Take Roſes, Clove-gilliflowers of each one pound, Flowers of Roſemary, Lavender, *Jaſemin*, Majoram, Savory, Time, of each three ounces, dry Citron peels one ounce, Cinnamon, Benjamin, *Storax Calamita*, of each two drachms, Nutmegs, Mace, of each one drachm, bruiſe the Herbs and Spices well, digeſt in the Sun two days, then diſtil in *Balneo*: to the diſtilled water add Muſk in powder one ſcruple.

IV. *The fourth ſweet Water.*

Take Cloves, Cinnamon of each one drachm, Mace, Grains, Muſk, Ambergrieſe, Citron peels of each half a ſcruple, Benjamin, *Storax Calamita* of each one ſcruple, *Aqua Roſarum* twelve pound, digeſt fifteen days, then diſtil in *Balneo*.

V. *The fifth ſweet Water.*

Take Roſemary-flower water, Orange-flower water of each five pound, Ambergrieſe one ſcruple, digeſt ten days, then diſtil in *Balneo*.

VI. *The ſixth ſweet Water.*

Take Roſes two pound, Macaleb half a drachm, Ambergrieſe ten grains, bruiſe what is to be bruiſed, digeſt in ſand three days, then diſtil in *Balneo*.

VII. *The ſeventh ſweet Water.*

Take green peels of Oranges and Citrons of each four drachms, Cloves half a drachm, flowers of Spike ſix ounces, *Aquæ Roſarum Damaſcenarum* ſix pound, digeſt ten days, then diſtil in *Balneo*.

VIII. *The eighth ſweet Water.*

Take of the water at the fifth Section ſix pound, Muſk ten grains, mix and digeſt them for uſe.

IX. *The ninth ſweet Water.*

Take *Aquæ Roſarum*, *Aquæ Florum de Jaſemin* of each

four pound, Musk one ſcruple, digeſt ten days, then diſtil in ſand.

X. *The tenth ſweet Water.*

Take Damask-roſe, Musk-roſes, Orange-flowers of each four pound, Cloves two ounces, Nutmegs one ounce, diſtil in an Alembick, in the noſe of which hang Musk three ſcruples, Amber two ſcruples, Civet one ſcruple, tyed up in a rag dipt in bran, and the white of an egg mixed.

XI. *The eleventh ſweet Water, called* Aqua Nanſa *or* Naphe.

Take *Aqua Roſarum* four pound, Orange-flower water two pound, waters of ſweet Trefoyl, Lavender, Sweet Majoram of each eight ounces, Benjamin two ounces, ſtorax one ounce, Labdanum half an ounce, Mace, Cloves, Cinnamon, Sanders, Lignum Aloes of each one ounce, Spikenard one ounce; all being groſly beaten, digeſt a month, then in a glaſs retort diſtil in *Balneo.*

XII. *The twelfth ſweet water, called* Aqua Moſchata.

Take ſpirit of Wine two pound, Musk three ſcruples, Amber two ſcruples, Civet one ſcruple, digeſt in the Sun twenty days cloſe ſtopped in a glaſs veſſel; a drop of this water put into any other liquor, will very perfume it.

So may you extract the ſcent out of ſweet Flowers, with this difference, that they lie but a little while, becauſe their earthy ſubſtance will make the ſpirit ill-ſavoured.

CHAP.

CHAP. XLV.

Of Perfuming Oils.

I. *To make Perfuming Oils by infuſion.*

II. This is taught fully at the fifth Section of the three and fortieth Chapter aforegoing.

II. *To make Oleum Imperiale.*

Take Ambergrieſe four drachms, *Storax Calamita*, eight ounces, Roſe-water, *Oleum Roſatum* of each two pound, Oil of Cinnamon and Cloves of each half a drachm, put all into a glaſs, and digeſt in horſe dung twenty days: this done gently boil all for a quarter of an hour, which then let cool; with a ſpoon take off the Oil which ſwims a top, to which put of Musk and Zibet of each two drachms, digeſt all in a gentle heat for twenty days, and keep it for uſe. Where note the Amber and Storax at bottom will ſerve to make ſweet balls of, to lay among cloaths; or beads to carry in ones hands; or for a perfume to burn.

III. *To make Oil of Cinnamon.*

Digeſt Cinnamon groſly bruiſed in ſpirit of Wine, ſharpned with oil of Salt, in a glaſs veſſel, with a blind head cloſely luted, in a gentle heat for ten days, then diſtil in an Alembick as we have more at large taught in our *Synopſis Medicinæ lib.* 3. *cap.* 47. *Sect.* 1. it is a wonderful Perfume, the moſt fragrant and pleaſant of all Oils, as well in taſt as ſmell: the uſe of it will certainly take away a ſtinking Breath.

IV. *To make Oil of Roſes, called* adeps Roſarum.

Take Damask Roſes, pickle them with Bay ſalt, and after three months, with a large quantity of water diſtil in aſhes with a gentle fire, ſo have you Oil, and

and Spirit or water, which keep for other diſtillations.

Weckerus hath it thus.

Roſarum folia in umbra aliquandiu aſſervata, in matula vitrea magna ponuntur, cujus ſit fundus latus, & ad dimidium vas impletur: indè affunditur ipſis Roſarum foliis tantum aquæ roſaceæ ſtillatitiæ, quantum ſatis fuerit, ut optimè madeant: appoſitóque pileo vitreo cæco, ſtipatiſque optimè rimis cera gummata, quindecim diebus equino fimo macerantur: ſic tamen, ut mutato, cùm frigeſcere cœperit, fimo, calor æqualis ſervetur. Appoſito mox matulæ roſtrato pileo, igne moderato cinerum, aqua omnis elicitur: quæ rurſus in eadem matula, optimè priùs à fœcibus mundata, ablutáque ponitur, & calentis aquæ balneo lentiſſimo igne elicitur, dum tota in vas recipiens abeat. Nam in fundo matulæ remanebit oleum roſarum, colore rubrum, perſpicuum, & Moſchi odore ſuaviter fragrans.

This is the greateſt of all vegetable perfumes, and of an ineſtimable value.

V. *To make Oil of Calamus* Aromaticus.

It is made as oil of Cinnamon: it is a very great perfume, helps a ſtinking breath, vomiting, weak memory, &c.

VI. *To make Oil of Rhodium.*

It is made as oil of Cinnamon; is a very excellent perfume, good for the head, breath and the ſenſes.

VII. *To make Oil of Indian Spicknard.*

By infuſion it is made by the firſt Section; by diſtillation, as oil of Cinnamon. It is an eminent Perfume.

VIII. *To make Oil of Benjamin.*

Take Benjamin ſix ounces in powder, which diſſolve in oil of Tartar and Aqua *Roſarum* of each one pound, which diſtil with a cloſe pipe in an Alembick. So is made oil of *Storax* and *Ladanum.*

IX. *To make oil of Storax compound.*

Take oil of Ben, or ſweet Almonds one pound, Storax

Storax groſly beaten four ounces, Benjamin, Cloves of each two ounces, digeſt (till the Gums are melted) over hot coals; then preſs out the oil diligently.

CHAP. XLVI.

Of Perfuming Eſſences.

I. *THe way to extract Eſſences is ſomewhat difficult, viz: by Diſtillation, Calcination, Digeſtion or Menſtruum.*

II. If by *Menſtruum*, uſe not a watry one for a watry eſſence; nor an oily one for an oily eſſence; becauſe being of like natures, they are not eaſily ſeparated; but on the contrary, chuſe an oily *Menſtruum* for a watry eſſence, and a watry *Menſtruum* for an oily eſſence.

III. If the eſſence of any metal be to be extracted by a *corroſive menſtruum*, after the work is done, ſeparate the ſalts from the waters, and uſe only thoſe ſalts which will be eaſily taken out again; *Vitriol* and *Alom* are very difficult to be ſeparated by reaſon of their earthy ſubſtance.

IV. *To extract the eſſence out of Muſk, Ambergrieſe Civet, and other Spices or Aromaticks.*

Mix the perfume with oil of Ben, which in a glaſs bottle ſet in the Sun or Sand for ten days, then ſtrain it from the dregs, and the eſſence will be imbibed in the oil. Then take ſpirit of Wine, and diſtilled fountain water, which mix with the ſaid oil, and digeſt for ſix days: then diſtil in ſand; ſo will the eſſence and water aſcend, (the oil remaining at bottom without any ſcent) that eſſence and water diſtil in *Balneo* in a glaſs veſſel,

veſſel, till the water be come off, and leave the eſſence in the bottom in the form of oil.

V. *Another way to do the ſame.*

Infuſe the matter in ſpirit of Wine a ſufficient quantity, digeſt and ferment for ten days, then diſtil in ſand, as long as any water will come over (but have a care of buring) which diſtilled Liquor draw off in *Balneo*, with a very gentle heat, and the quinteſſence will be left in the bottom, of a liquid form.

VI. *To extract the eſſence out of Herbs and Flowers, as of Sweet Majoram, Baſil, Orange-flowers, Jaſemin, &c.*

Bruiſe the matter, and put it into a glaſs veſſel to ferment in Horſe-dung for a month; then diſtil in *Balneo*; ſet it in dung for a week again, and diſtil in *Balneo* again; which reiterate ſo long as it will yield any liquor; put the diſtilled matter upon the *Caput mortuum*, diſtilling thus for ſix days: draw off the water in *Balneo*; and the eſſence remaining expreſs in a preſs: which being a week fermented in dung, will yield the perfect ſcent, colour and vertues of the matter deſired.

VII. *To extract the eſſence out of Salts.*

Calcine the Salt, and grind it very ſmall, then lay it upon a marble in a moiſt Cellar, ſetting under it a pan to receive the diſſolution; therein let it ferment for a month, then with a gentle fire diſtil in *Balneo*: caſt away the inſipid water, which comes from it; and ſet that which remains in the bottom, to ferment another month, then diſtil out the inſipid water as before; repeating this work ſo long as any inſipid water may be drawn: then evaporate away all the moiſture, and what remains is the quinteſſence of Salt.

Where note 1. *That theſe Saline quinteſſences as they may be uſed, will draw forth the perfect and compleat eſſence of any vegetable whatſoever.* 2. *That the eſſence of Salts thus drawn will ſcarcely come to two ounces in a pound.*

CHAP.

CHAP. XLVII.

Of Perfuming Unguents.

I. *To make* Unguentum Pomatum, *or Ointment of Apples.*

Take Hogs Lard three pound, Sheeps Suet nine ounces, bruiſed Cloves one drachm, *Aqua Roſarum* two ounce, Romwaters pared and ſliced one pound, boil all to the Conſumption of the Roſe water; then ſtrain without preſſing, to every pound of which add oil of *Rhodium* and Cinnamon of each thirty drops.

II. *To make a compound Pomatum.*

Take of the Pomatum aforeſaid, (without the oils) four pound, Spikenard, Cloves of each two ounces, Cinnamon, Storax, Benjamin of each one ounce (the Spices and Gums bruiſed and tyed up in a thin rag) Roſe water eight ounces; boil to the Conſumption of the Roſe water, then add white wax eight ounces, which mix well by melting, ſtrain it again being hot; and when it is almoſt cold, mix therewith oil of Musk (made by the firſt Section of the five and fortieth Chapter) then put it out, and keep it for uſe.

III. *Another excellent Ointment.*

Take hogs grieſe one pound, *Saccharum Saturni* two ounces, mix them well by gently melting them; to which add oils of Musk and Ambergrieſe of each half an ounce, let them all cool, and beat the Unguent well in a mortar, and keep it for uſe.

IV. *To make Unguentum Moſchatum.*

Take hogs grieſe one pound, Ambergrieſe, Moſch of each one drachm and a half, (ground with oil of Jaſemin upon a marble) *adeps Roſarum* half an ounce (ground with

with Civet one drachm) mix all together into an ointment which keep for uſe

CHAP. XLVIII.

Of Perfuming Powders.

I. *To make Powder of Oxe dung.*

Take red Ox dung in the month of *May* and dry it well, make it into an impalpable Powder by grinding: it is an excellent Perfume without any other addition; yet if you add to one pound of the former, Musk, and Ambergrieſe of each one drachm it will be beyond compariſon.

II. *To make Cyprian Powder.*

Gather Musk moſs of the Oak in *December*, *January* or *February*, waſh it very clean in Roſe water, then dry it, ſteep it in Roſe water for two days, then dry it again, which do oftentimes; then bring it into fine Powder and ſierce it; of which take one pound, Musk one ounce, Ambergrieſe half an ounce, Civet two drachms, yellow Sanders in powder two ounces, mix all well together in a marble mortar.

III. *Another way to make the ſame.*

Take of the aforeſaid powder of Oak moſs one pound, Benjamin, Storax of each two ounces in fine Powder; Musk, Ambergrieſe and Civet of each three drachms, mix them well in a mortar.

IV. A *Sweet Powder to lay among cloaths.*

Take Damask-roſe leaves dryed one pound, Musk half a drachm, Violet leaves three ounces, mix them and put them in a bag.

V. *Another for the ſame or to wear about one.*

Take

Take Roſe leaves dryed one pound, Cloves in powder half an ounce, Spicknard two drachms, Storax, Cinnamon of each three drachms, Musk half a drachm, mix them and put them into bags for uſe.

VI. *Powder of ſweet Orrice, the firſt way.*

Take Florentine Orrice root in powder one pound, Benjamin, Cloves of each four ounces in powder, mix them.

VII. *Powder of Florentine Orrice, the Second Way.*

Take of Orrice root ſix ounces, Roſe leaves in powder four ounces, Majoram, Cloves, Storax in powder of each one ounce, Benjamin, yellow Sanders of each half an ounce, Violets four ounces, Musk one drachm, Cyperus half a drachm, mix them: being groſly powdred, put them into bags to lay amongſt linnen: but being fine they will ſerve for other uſes, as we ſhall ſhew.

VIII. *Powder of Orrice roots, the third way, excellent for linnen, in bags.*

Take roots of Iris one pound, ſweet Majoram twelve ounces, flowers of Roſemary and Roman Camomil, leaves of Time, *Geranium Moſchatum*, Savory of each four ounces, Cyperus roots, Benjamin, yellow Sanders, *Lignum Rhodium*, Citron peel, *Storax*, *Labdanum*, Cloves, Cinnamon of each one ounce, Musk two drachms, Civet one drachm and a half, Ambergrieſe one drachm, powder and mix them for bags. This compoſition will retain its ſtrength near twenty years.

IX. *Powder of Orrice, the fourth Way.*

Take Orrice roots in powder one pound, *Calamus Aromaticus*, Cloves, dryed Roſe leaves, Coriander ſeed, *Geranium Moſchatum* of each three ounces, *Lignum Aloes*, Majoram, Orange peels of each one ounce, Storax one ounce and a half, *Labdanum* half an ounce, Lavender,

vender Spicknard of each four ounces, powder all and mix them, to which add Musk, Ambergrieſe of each two ſcruples.

X. *Pulvis Calami Aromatici compoſitus.*

Take *Calamus Aromaticus*, yellow Sanders of each one ounce, Majoram, *Geranium Moſchatum* of each one ounce, Roſe leaves, Violets, of each two drachms, Nutmegs, Cloves of each one drachm, Musk half a drachm, make all into powder, which put in bags for Linnen.

XI. *Another of the ſame.*

Take *Calamus Aromaticus*, Florentine Iris roots of each two ounces, Vjolet flowers dryed one ounce, round Cyperus roots two drachms, *adeps Roſarum* one drachm and a half, reduce all into a very fine powder: it is excellent to lay among Linnen, or to ſtrew in the hair.

XII. *An excellent perfuming Powder for the hair.*

Take Iris roots in fine powder one ounce and a half, *Benjamin*, *Storax*, Cloves, Musk of each two drachms; being all in fine powder, mix them for a Perfume for hair Powder. Take of this Perfume one drachm, Rice flower impalpable one pound, mix them for a powder for the hair. Note, ſome uſe white ſtarch, flower of French Beans and the like.

CHAP. XLIX.

Of Perfuming Balſams.

I. *Natural Balſam perfumed.*

Take *Balſamum verum* one ounce, Musk, Ambergrieſe, Civet of each two ſcruples, mix them, for a Perfume;

Perfume: it is the moſt fragrant and durable of all Perfumes.

II. *An odoriferous compound Balſam.*

Take of the aforeſaid Balſam perfumed one ounce, oils of *Rhodium* and Cinnamon of each two drachms, mix them: this is an incomparable Perfume, and better than the other for ſuch as are not affected ſo much with musk.

III. *Balſamum Moſchatum.*

Take oil of Musk one drachm, oil of Cinnamon half a ſcruple, Virgin wax one drachm and a half, melt the wax, and mix them according to Art.

IV. *Another very good.*

Take Cloves, Cinnamon, Lavender, Nutmegs of each two drachms, oils of Cloves and *Rhodium* of each half a drachm, Wax three drachms, Musk and Ambergrieſe of each ten grains, mix them into a Balſam.

V. *Another very excellent for thoſe that love not the ſcent of Musk and the like.*

Take oil of *Geranium Moſchatum* (made as *adeps Roſarum* by the fourth Section of the five and fortieth Chapter) *adeps Roſarum*, oil of Cinnamon of each one drachm, Virgin wax ſix drachms, melt the wax, and mix the oils for a Perfume.

CHAP. L.

Of Perfuming Tablets.

I. *To make red Muskardines or Tablets.*

Diſſolve gum *Tragacanth* in Roſe water, ſo that it may be as thick as Gelly: wich make into paſte with the following compoſition. Take *Amylum* one pound,

fine Sugar half a pound, *Cochenele* two ounces, Musk three drachms, all being in fine powder, mix them, and make tablets with the aforesaid Mucilage of Tragacanth, square, long, round, or of what form you please, which dry in an Oven, out of which bread hath been lately drawn: but be sure you dry them till they be as hard as horns.

II. *Another sort of Red Tablets.*

Take of the aforesaid composition one pound, Cloves, Cinnamon, Nutmegs, Ginger of each two ounces, Cochenele one ounce, all being in fine powder, make into tablets, with the aforesaid Mucilage, and dry as aforesaid.

III. *To make yellow Tablets.*

Take *Amylum* one pound, fine Sugar half a pound, yellow Sanders four ounces, Saffron two ounces, (or you may dip the *Amylum* in strong tincture of Saffron, and then dry it again) Musk four drachms, all being in fine powder, make the mass into tablets with the aforesaid Mucilage, adding oil of Cinnamon in drops two drachms, dry them carefully in the shade.

IV. *Another sort of yellow Tablets.*

Take *Amylum* dyed with tincture of Saffron 1 pound, Sugar half a pound, Saffron two ounces, Nutmegs, Cinnamon, Ginger of each one ounce, Carroways half an ounce, Musk three drachms, Ambergrise one drachm, all in fine powder make into tablets, as aforesaid, adding oil of Cinnamon two drachms; which dry in the shade, till they be as hard as Horns.

V. *To make Muscardines or Tablets of any other colour.*

You must make them after the same manner, only adding the colour you do intend; and in this case we think that it is better that the *Amylum* be dipt in the tincture, and dryed first before you use it. Where note, that

that theſe Tablets when uſed are to be held in the mouth, in which they will diſſolve, there by cheering the heart, reviving the ſenſes, comforting the ſpirits, ſtrengthning nature, reſtoring the body, and indeed nobly perfuming the breath. For them that do not love Musk, you may make them without, uſing inſtead thereof ſo much the more oil of Roſes or Cinnamon.

CHAP. LI.

Of making Pomanders for Bracelets.

I. *The firſt ſort.* Take Orrice powder, Cloves, Mace, Cinnamon of each half an ounce, yellow Sanders, Styrax, ſweet *Aſſa* of each two drachms, Ambergrieſe, Musk of each one drachm, Balſam of *Peru*, oil of *Rhodium* of each one ſcruple, Civet two drachms, all being in fine powder (except the Balſam and Oil) mix together, and make into paſte with mucilage aforeſaid, of which form Beads, drying them in the ſhade for uſe.

II. *The ſecond ſort.* Take *Storax Labdanum* one drachm and a half, Benjamin one drachm, Cloves, Mace, Spicknard, *Geranium Moſchatum* of each ten grains, Musk, Ambergrieſe of each ſix grains; with mucilage make a *Pomander* for Bracelets.

III. *The third ſort.* Take Damask Roſe leaves exungulated two ounces, beat them impalpable: Musk, Ambergrieſe of each two ſcruples, Civet one ſcruple, *Labdanum* one drachm, with mucilage of gum Tragacanth, in Roſe-water aforeſaid, make a *Pomander* for Bracelets.

IV. *The fourth ſort.* Take Storax, Benjamin of

each an ounce and a half, Musk two drachms, oil of Cinnamon one drachm, with Mucilage aforesaid make a paste of *Pomander*, very excellent.

CHAP. LII.

Of Perfuming Wash-balls.

I. *To make Barbers Wash-balls.*

Take purified Venetian Soap six ounces, Macaleb four ounces, *Ireos*, *Amylum* of each seven ounces, Cloves two ounces, *Labdanum*, Anniseeds of each one ounce, Nutmegs, Majoram, Cypress powder, *Geranium Moschatum*, Camphire of each half an ounce, *Storax liquida* half a drachm, Musk ten grains, all being in fine powder, with a little fine Sugar, beat all in a mortar, and make them up into Wash-balls.

II. *To do the same another way.*

Take of the said Soap two pound, juice of *Macaleb* two ounces, Cloves, Orrice of each three ounces, *Labdanum* two ounces, Storax one ounce, all being in fine powder, mix with the Soap, of which make balls, drying them in the shadow.

III. *To make Balls of white Soap.*

Take of white Soap five pound, *Iris* four ounces, *Amylum*, white Sanders of each three ounces, Storax one ounce, all in powder, steep in Musk water, of which make paste for Wash-balls.

IV. *Another sort very good.*

Take of white Soap four pound, Orrice six ounces, *Macaleb* three ounces, Cloves two ounces, all in powder mix with the Soap, with a little oil of Spike, Rhodium or the like, of which make Balls.

V. A-

V. *Another way to make them of Goats fat.*

Make a ſtrong *Lixivium* of Pot-aſhes, as that a new laid egg will ſwim thereupon, which boil with Citron peels: take of this Lye twenty pound, Goats fat two pound, boil it for an hour, then ſtrain it through a linnen cloth into broad platters of fair water, expoſing it to the Sun, mix it often every day, till it begins to grow hard, of which you may form balls, which you may perfume with Musk half a drachm, Civet one ſcruple, oil of Cinnamon ten grains.

VI. *To purifie Venetian Soap.*

Cut it ſmall, to which put ſome Roſe water, or other perfuming water, boil them a while, then ſtrain it and it will be ſweet and good, then take off the Soap which ſwims a top with a ſpoon, and lay it upon a tyle, and it will preſently be dry, being white, free from filth and unctuoſity.

VII. *Another way to do the ſame.*

Grate the Soap, and dry it in the Sun, or an Oven, powder and ſierce it, then moiſten it with ſome ſweet water or oil of Spike, which dry again (in the ſhadow) and keep it for uſe.

CHAP. LIII.

Of Perfuming Soaps.

I. *To make white musked Soap.*

Take white Soap purified as aforeſaid three pound, Milk of *Macaleb* one ounce, Musk, Civet of each ten grains, mix them and make all into thick Cakes or rouls.

II. *Another kind of ſweet Soap.*

Take of the oldeſt Venice Soap, which ſcrape and dry three days in the Sun (purifying it as aforeſaid) two pound, *Ireos*, *Amylum* of each ſix ounces, *Storax liquida* two ounces, mix them well whileſt hot; which put into pans to form Cakes.

III. *To make ſoft Soap of Naples.*

Take of *Lixivium* of Pot-aſhes (ſo ſtrong as to bear an egg) ſixteen pound, Deers Suet two pound, ſet them upon the fire to ſimper; put all into a glaſed veſſel with a large bottom, ſet it in the Sun for a while, ſtirring it five or ſix times a day with a ſtick, till it wax hard like paſte. Then take of this paſte, to which put Musked Roſe water; keep it eight days in the Sun, ſtirring it as aforeſaid, ſo long as it may be neither too hard nor too ſoft; then put it up in boxes or pots.

IV. *To make the ſame Soap musked.*

Put to the ſaid Soap, Roſe water two pound, fine musk in powder half a drachm, then mix the ſaid water as before.

V. *Another exquiſite Soap.*

Take of the aforeſaid *Lixivium* or oil of Tartar *per deliquium* twelve pound, oil Olive three pound, mix them, *Amylum* two pound, Roman Vitriol one ounce in powder, Glair of eggs two ounces, put all together, and ſtir continually for four hours time, then let it ſtand the ſpace of a day and it is done. You may perfume it as before; this makes the hair fair.

VI. *Another exceeding the former.*

Take Crown-ſoap, Vine-aſhes of each one pound, make it into Cakes with powder of Roch Alom and Tartar of each alike, which you may perfume at pleaſure.

VII. *To get the juice or milk of Macaleb.*

Take the ſweet and odoriferous grains of *Macaleb*, which beat in a mortar (with Roſe water, or ſome perfuming

perfuming water) till it becomes like pap, then preſs out the juice or milk; which uſe within two or three days leſt it ſpoil.

CHAP. LIV.

Of Burning Perfumes.

I. *To make perfumed lights.*

Take *Olibanum* two ounces, Camphire one ounce, beat them into powder, of which make, with wax, balls or rouls, which put into a glaſs lamp with Roſe water and lighted with a candle, will give a fair light, and a very good ſcent.

II. *Another for a Lamp.*

Take ſweet oil Olive one pound, Benjamin, Storax in powder one ounce, Musk, Ambergrieſe of each one ſcruple, mix all with the oil, which put into a lamp to burn: and the oil will yield a fragrant odour.

III. *To make perfumed Candles.*

Take *Labdanum*, Myrrh, *Xyloaloes*, *Styrax calamita* of each one ounce and a half, Willow Charcoal one ounce, Ambergrieſe, Musk of each ten grains, make them into paſte with mucilage of Gum *Tragacamb* in Roſe water, which make into rouls like Candles, and dry for uſe.

IV. A *perfume to ſmoak and burn.*

Take *Labdanum* two ounces, Storax one ounce, Benjamin, Cloves, Mace of each half an ounce, Musk, Civet of each ten grains, all in fine powder, make up into cakes with mucilage of gum Tragacanth in Roſe water, which dry; and keep among your cloaths; which when occaſion requires you may burn in a chafing-diſh of coals.

V. *Another ſmoaking perfume to burn.*

Take *Labdanum* two drachms, Storax one drachm, Benjamin, Frankincenſe, white Amber, Xylo-aloes of each two ſcruples, Ambergrieſe, Musk of each five grains, make all into Cakes as aforeſaid.

VI. *Another very excellent.*

Take Storax, Benjamin of each one ounce, wood of Aloes half an ounce, Ambergrieſe, Musk, Civet, Balſam of Peru, oil of Rhodium of each two ſcruples, Ivory burnt black a ſufficient quantity, powder what is to be powdred, and mix all together; which make into a paſte, with the Ivory black and the mucilage aforeſaid; make little cakes and dry them, which keep in glaſſes cloſe ſtopt for uſe.

VII. *Another very good, but of leſs coſt.*

Take Olibanum one pound, *Storax Calamita* and *Liquida* of each eight ounces, *Labdanum* ſix ounces, Willow charcoal a ſufficient quantity, with mucilage of Tragacanth, make a paſte as aforeſaid.

CHAP. LV.

Of Animal and Mineral Perfumes.

I. THE *Animal Perfume of* Paracelſus.

Take Cow-dung in the month of *May* or *June*, and diſtil it in *Balneo*; and the water thereof will be an excellent perfume, and have the ſcent of Ambergrieſe. See our *Synopſis Medicinæ lib.* 3. *cap.* 75. *Sect.* 5.

II. *Lard muskified, a great perfume.*

Take hogs lard very pure one drachm, Musk, Civet, of each half a drachm, mix them well for boxes.

III. *The Mineral Perfume of* Antimony.

Diſſolve

Diſſolve Antimony in oil of Flints, Cryſtal or Sand, coagulate the ſolution into a red maſs, put thereon Spirit of Wine, and digeſt till the Spirit is tinged; pour it off, and put on more, till all the tincture is extracted; put all the tinctures together, and evaporate the Spirit of Urine in *Balneo*; and there will remain a blood-red liquor at bottom; upon which put Spirit of Wine, and you ſhall extract a very pure tincture, ſmelling like Garlick: digeſt it a month, and it will ſmell like Balm; digeſt it a while longer, and it will ſmell like Musk or Ambergrieſe.

Beſides being a perfume, it is an excellent ſudorifick, and cures the Plague, Feavers, *Lues Venerea*, &c.

IV. *After the ſame manner you may make as ſubſtantial a perfume of Sulphur or Brimſtone. The making of the oil of Flints we have taught at the ſeven and fiftieth Section of the nine and twentieth Chapter of the third Book.*

CHAP. LVI.

Of the Adulteration of Musk, Civet and Ambergrieſe.

BY reaſon that theſe choice Perfumes are often adulterated or counterfeited, we ſhall do our endeavour to diſcover the cheat, leſt any being deceived thereby ſhould ſuffer loſs.

I. *Musk is often adulterated* by mixing Nutmegs, Mace, Cinnamon, Cloves, Spicknard of each alike in a fine or impalpable powder with warm blood of Pidgeons, and then dryed in the Sun, then beaten again, and moiſtened with Musk water drying and repeating the ſame work eight or ten times; adding at laſt a quarter part of pure Musk by moiſtening and

and mixing with Musk water; then dividing the maſs into ſeveral parts, and rouling them in the hair of a goat, which grows under his tail.

II. *Others adulterate it thus:* By filling the Musk cods with Goats blood, and a little toaſted bread, mixed with a quarter part of Musk, well beaten together. The cheat is diſcerned by the brightneſs of the Goats blood.

III. *Or thus*, Take Storax, *Labdanum*, powder of Xylo-aloes, of each four ounces, Musk and Civet of each half an ounce, mix all together with Roſe water. The cheat is diſcerned, by its eaſie diſſolving in water, and its different colour and ſcent.

IV. *Or thus*, Take Goats blood, powder of Angelica roots, Musk of each alike, make a mixture.

V. *To adulterate Civet*: Mix with it the Gall of an Oxe, and Storax liquefied and waſhed: or you may adulterate it by the addition of Honey of Crete.

VI. *To reſtore the loſt ſcent to Musk, or Ambergrieſe.* This is done, by hanging it ſome time in a Jakes or houſe of Office; for by theſe ill ſcents, its innate vertue and odour is excited and revived.

CHAP. LVII.

Of the way of Perfuming Cloth, Skins, Gloves and the like.

I. *TO Perfume Skins or Gloves.*

Put a little Civet thereon here and there, (if Gloves, along the ſeams) then waſh in Roſe or musked water four or five times, or ſo long as that they ſavour no more of the leather, preſſing them hard every time; then

then lay them in a platter, covered with the ſaid water, mixed with powder of Cypreſs, a day or two; take them out, preſs them, and dry them in the ſhadow: being half dry, beſmear them a little with Civet mix'd with oil of Jaſemin or Ben, on the inward ſide, chafing them with your hands before a fire, till you think that the Civet hath pierced or gone through the leather; leaving them ſo a day or more; then rub with a Cloth that the Gloves or Leather may grow ſoft; leaving them ſo till they are almoſt dry, being drawn and ſtretched out; then hold them over ſome burning Perfume to dry, and wetting them again with Musk water, do thus twenty times; laſtly, take Musk and Ambergrieſe a ſufficient quantity, which mix with oil of Jaſemin, Benjamin or Ben, diſſolve at the fire with a little perfumed water, with which (with a pencil) ſtrike the Gloves or Leather over on the outſide, beſmearing the ſeams with Civet; laſty lay them for ſix or eight days; between two mattreſſes, ſo will the Skins or Gloves be excellently perfumed.

II. *Another way very excellent.*

Take three pints of Wine, Sheeps ſuet or fat one pound, boil them together in a veſſel cloſe covered; this done, waſh the Grieſe ſix or ſeven times well with fair water, then boil it again in White-wine and Roſe water of each one pound and a half, with a ſmall fire, till the half be conſumed: then take the ſaid grieſe, to which put pulp of ſweet Navews roaſted half a pound, boil all in Roſe water half an hour, then ſtrain it, and beat it in a mortar, with a little oil of Jaſemin and Musk, with which beſmear your Gloves (after due waſhing as aforeſaid) rubbing it well in by the fire.

III. *Another way for Gloves.*

Waſh new Corduban Gloves, waſh them well three or four days (once a day) in good White-wine, preſſing

ſing and ſmoothing them well; laſtly, waſh them in musked water, letting them lye therein for a day, then dry them with care. This done, ſteep *Musk*, *Amber*, *Bazil* of each one drachm in a quart of ſweet water, in which diſſolve gum *Tragacanth* three drachms, boil all gently together, and in the boiling add *Zibet* one ſcruple, with which beſmear the Gloves, rubbing and chafing it in, then drying them according to Art.

IV. *Or thus*, Firſt waſh the Gloves or Skins in white-wine, then dry them in the ſhade; then waſh them in ſweet water, mixed with oil of Cloves, and *Labdanum* of each alike: laſtly, take Musk, Civet, Ambergrieſe of each the quantity of ſix grains, oil of Musk half a drachm, mucilage of gum Tragacanth fifteen grains, mix them well together in a mortar, which chafe into the waſh'd Gloves before the fire.

V. *Cloths, Linnen or Woolen, Coffers, Trunks* and the like, are beſt perfumed (with little coſt) with the ſmoak of burning Perfumes.

CHAP. LVIII.

Of making various ſorts of Ink.

I. *To make good black writing Ink.*

Take ponderous galls three ounces in powder, White-wine, or in place thereof rain water, which is better, three pound, infuſe them in the Sun or in a gentle heat two days: then take Roman Vitriol well coloured and powdred, which put therein, and ſet all in the Sun for two days more; ſhake all together, to which add of good gum Arabick in little bits one ounce, with a litte white Sugar, which diſſolve over a gentle fire.

II. *To*

II. *To make red writing Ink.*

Take Raſpins of Brazil one ounce, white lead, Alom of each two drachms, grind and mingle them, infuſe them in Urine one pound, with gum Arabick eight ſcruples.

III. *Another way to make red Ink.*

Take Wine-vinegar two pound, Raſpings of Brazil two ounces, Alom half an ounce, infuſe all ten days; then gently boil, to which add gum Arabick five drachms, diſſolve the Gum, ſtrain, and keep it for uſe.

IV. *To make green Ink to write with.*

Make fine Verdigrieſe into paſte with ſtrong Vinegar, and infuſion of green galls, in which a little gum Arabick hath been diſſolved; let it dry, and when you would write with it, temper it with infuſion of green Galls aforeſaid.

V. *Another way to make green Ink to write with.*

Diſſolve Verdigrieſe in Vinegar, then ſtrain it, and grind it with a little honey and mucilage of gum Tragacanth, upon a porphyry ſtone.

VI. *To make blew Ink to write with.*

Grind Indico with honey mixed with glair of eggs or glew water, made of Iſinglaſs diſſolved in water, and ſtrained.

VII. *To make red writing Ink of Vermilion.*

Grind *Vermilion* well upon a porphyry ſtone, with common water; dry it and put it into a glaſs veſſel, to which put Urine, ſhake all together, let it ſettle, then pour off the Urine; and putting on more Urine, repeat this work eight or ten times, ſo will the *Vermilion* be well cleanſed; to which put glair of Eggs, to ſwim on it above a fingers breadth, ſtir them together, and ſetling abſtract the glair: then put on more glair of eggs, repeating the ſame work eight or ten times alſo,

to

to take away the ſcent of the Urine: laſtly, mix it with freſh glair, and keep it in a glaſs veſſel cloſe ſtop'd for uſe. When you uſe it, mix it with water or vinegar.

VIII. *To make Printers black.*

This is made by mingling Lamp black with liquid Varniſh, and boiling it a little, which you may make thick at pleaſure. You muſt make it moiſter in winter, than in Summer; and note that the thicker Ink makes the fairer letter.

If it be too thick, you muſt put in more Linſeed oil, or oil of Walnuts, ſo may you make it thicker or thinner at pleaſure.

IX. *To make red Printing Ink.*

Grind Vermilion very well with the aforeſaid liquid Varniſh or Linſeed oil.

X. *To make green Printing Ink.*

Grind Spaniſh green with the ſaid Varniſh or Linſeed oil as aforeſaid: And after the ſame manner, may you make Printers blew, by grinding Azure with the ſaid Linſeed oil.

CHAP. LIX.

Of making Sealing Wax;

I. *To make red Sealing Wax.*

Take white Bees wax one pound, Turpentine three ounces, Vermilion in powder well ground, oil Olive of each one ounce, melt the wax and Turpentine; let it cool a little, then add the reſt, beating them well together.

II. *To do the ſame otherwiſe.*

This is done by taking away the Vermilion, and adding inſtead thereof red Lead three ounces, to the former things.

III. *To*

III. *To make green Wax.*

Take Wax one pound, Turpentine three ounces, Verdigrieſe ground, Oil Olive of each one ounce, complete the work by the firſt Section.

IV. *To make black Wax.*

Take Bees Wax one pound, Turpentine three ounces, black earth, Oil Olive of each one ounce, mix and make Wax as aforeſaid.

V. *To make Wax perfumed.*

This is done by mixing with the Oil Olive aforeſaid, Musk, Ambergrieſe, or any other eminent Perfume, as oil of Cinnamon, *adeps Roſarum*, or the like one drachm, more or leſs, according as you intend to have its ſcent extended.

VI. After the ſame manner you may make Sealing wax of all colours, having what ſcent you pleaſe; by mixing the ſcent intended, with the Oil Olive, and putting the colour in, in place of the Vermilion.

CHAP. LX.

Of the various ways of making Artificial Pearls.

I. *The firſt Way.* Diſſolve mother of Pearl in ſpirit of Vinegar, then precipitate it with oil of Sulphur *per Campanum* (not with *Oleum Tartari*, for that takes away the ſplendor) which adds a luſtre to it; dry the precipitate, and mix it with whites of eggs; of which maſs you may make Pearls, of what largeneſs you pleaſe, which before they be dry, bore through with a ſilver Wire, ſo will you have pearls ſcarcely to be diſcerned from thoſe which are truly natural.

II. *The ſecond way.* Take Chalk, put it into the fire,

fire, letting it lye till it breaks; grind it impalpable, and mix it with whites of eggs, of which form pearls, boring them as aforesaid; dry them, then wet and cover them with leaf silver.

III. *The third way.* Take prepared Crabs eyes, ground into impalpable powder, and with glair make Pearls; which bore, as aforesaid; dry them, and boil them in Cows milk; then in the shade (free from dust) dry them well; they will please.

IV. *The fourth Way.* Take potters earth, and make them of what form you please; dry them in the Sun, or in the gentle heat of a furnace; then wet them with glair of eggs, lightly coloured with Bole armoniack, and cover them with leaves of silver, being first wet with water: when they are dry, polish them with a tooth, and they will be Oriental. Then take bits of Parchment, and wash them in warm water, till the water grows somewhat thick, boil and strain it, and use it warm: then fasten each pearl through its hole upon a fine piece of wire, and plunge them into the water of Parchment, taking them out again; then turn them round, that the glewy liquor may equally cover them: thus the silver whiteness will the better shine through, so that the pearls will seem to be truly natural, and being compared, will rather exceed.

V. *The fifth Way.* Calcine Muscle and snail shells in a Crucible, till they are very white, even as snow; with glair make Pearls, which bore by the first Section; dry them in the Sun; dip them in red wine, dry them again, and they will be fair.

VI. *The sixth Way.* Take *Sublimate* two ounces, *Tinglass* one ounce, mix them, and sublime them together, and you will have a sublimate not inferiour to the best orient Pearls in the world, of which with glair, you may form what you please.

VII. *The*

VII. *The ſeventh Way.* Take any of the aforeſaid particulars, and mix them (inſtead of glair) with ground Varniſh, (made of gum Animæ, and the *Alcool* of wine) of which make pearls; theſe will in all reſpects be like the natural; for theſe will no more diſſolve in water, than the truly natural; which all thoſe that are made of glair of eggs are unavoidably ſubject to.

VIII. *The eighth Way.* After diſſolution, precipitation, edulcoration, ſiccation and formation, put the pearls into a loaf of bread, and bake it in the Oven with other bread, ſo long till the loaf is much burnt, then take them out, and waſh them, firſt in good juice of Limons, then in clear Spring water; and they will be as fair as the truly natural. Or after baking, give them to pidgeons to eat, keeping them cloſe up, and in the dung you will find the pearl exceeding fair: where note, you muſt give the pidgeons nothing to eat in three days time.

IX. *The ninth Way.* After diſſolution of ſmall oriental pearls in juice of Limons, make the form thereof with clarified honey, moiſtning your hand with *Aqua Mellis*; this done, perfect them as before.

X. *The tenth Way.* Take filtrated juice of Limons, powder of pearl of each ſix ounces, *Talk* one ounce, put them into a glaſs, and ſtop it cloſe, ſet it fifteen days in horſe-dung, and it will be a white paſte; of which form pearl, bore them, and dry them in the Sun; at laſt in paſte of barley meal (*viz.* a barley loaf) four fingers thick, ſtick the pearl, ſo that they may not touch, ſtop the holes, and cover them with paſte; ſet it into an Oven, and bake it with bread, and you will find them hard and clear.

XI. *The eleventh Way.* Having formed them of the matter intended, bored and dryed them, put them in-

to Quickſilver, ſet over a glowing heat, ſtirring them well about, that the Quickſilver may ſtick to them; then dip them into glair of eggs, upon a glowing heat, and they are done; or being dry, boil them in Linſeed oil, and waſh them in warm water.

XII. *The twelfth Way.* Take pearl three ounces, prepared Salt one ounce, filtrated juice of Limons, ſo much as will cover them four fingers breadth: let it ſtand ſo long till it be a paſte; the glaſs being very cloſe ſtopped, ſhake all together five or ſix times a day; and when it comes to a paſte put it into a glaſs with ſtrong ſpirit of Vinegar, lute another glaſs over it; digeſt it three weeks in a cool place under the earth, ſo long till all be diſſolved, then mix it with a little oil of eggs, or ſnail water, till it be like pearl in colour; then put this paſte into ſilver moulds, and cloſe them up for eight days; after which take them out, and bore them by the firſt Section, and put them again into the mould for eight days; this done, boil them in a ſilver porringer with milk; laſtly, dry them upon a plate, in a warm place, where neither wind nor duſt may come, and they will be much fairer than any oriental pearl.

XIII. *The thirteenth Way.* After the preparation of the matter in juice of Limons, or *Aqua fortis*, with clean hands make them into paſte, and waſh them in diſtilled water, which put into edulcorate calx of ſilver, and digeſt in Horſe-dung for a month, ſo will they be fair and very oriental.

XIV. *The fourteenth Way.* Diſſolve the matter in *Aqua fortis* (which let over-top it a fingers breadth) in a glaſs gourd, till all be incorporated into one body, which put into ſilver moulds, which have holes through them, and having ſtood one day, bore them through the holes, as they lie in the mould with a ſilver needle: being quite dry, take them out, put them into

into a glass close covered in the Sun, till they be quite dry; then put them upon a silver wire; and let them lie covered in their own fat (that is, that fatty substance which swims on the top of the menstruum in their dissolution) so long till they are very fair, then being strung, put them into a glass egg, and let them stand nine days in digestion, and they will be as fair as the natural.

XV. *The fifteenth Way.* Take Tobacco-pipe clay, of which form little beads (by the fourteenth Section) dry them in the Sun, and burn them in a potters furnace; then cover them with Bole armoniack, tempered with whites of eggs; being dry, dip them in water, lay on leaf silver, which dry again, and polish them with a tooth: then take clean shavings of parchment, cut small, and washed well with warm water; boil them in a new pot, with a slow fire, till they become somewhat thick, strain it, and being warm put in the pearl upon a needle or fine wire, that the hole may not be stopped, take them out, turn them round, that the water or glew may not settle in one place, dipping them so often (drying them every time) till they be thick enough, and they will appear full as fair as the truly natural.

CHAP. LXI.

Of the Consummation or Perfection of the Art of Painting.

I. *As Invention gave way to the advancement of Art; so the advancement of the same made way for its Perfection.*

The invention arose from the appearance of things natural, conceived in *Idea's*, as we have abundantly

ſignified (*in the firſt Chapter of this Book*) the Advance from the bringing of thoſe *Idea's* to light through practice (*by Chap.* 35.) from when aroſe things *very excellent for greatneſs, very good for their uſefulneſs, choice for their novelty, and ſingular for their kind.*

II. *Eaſe of Invention, Plenty of Matter, and Neatneſs of Work, were ſteps by which Art was conſummated. For eaſe of Invention gave Encouragement, Plenty of Matter gave Formation, and Neatneſs gave Delight,* all which ſo conſpired together, to put ſo much of emulation into the Artificer, to undertake, or endeavour to do thoſe things, which in their kind might never after be exceeded: this indeed was their aim of old, which although the antients of this Art could never attain unto, yet did they make ſuch way, that ſome of their followers have done thoſe things, which never any after them could ever mend, nor themſelves ſcarcely come near. Eaſie invention ſprings out of a great and well rooted fulneſs of learning; by being converſant in all ſorts of ſtudies, having Familiarity with Antiquities; the knowledge of innumerable hiſtorical and poetical narrations, together with a through acquaintance with all ſuch motions and Idea's of the mind, as are naturally incident unto men: for the whole force of this Art doth principally conſiſt in theſe things, nothing bearing a greater ſway in the manifold varieties of *Painting.*

III. *It was the opinion of* Pamphilus (*the maſter of* Apelles) *that without the knowledge of Arithmetick, Geometry and the Opicks, this Art could not be brought to Perfection.*

The examples of *Phidias* and *Alcamenes* is pertinently brought here; The *Athenians* intending to ſet up the Image of *Minerva* upon a high pillar, employed thoſe two workmen, purpoſing to chuſe the better of the two; *Alcamenes* (having no skill in *Geometry* nor the *Opticks*)

Opticks) made her wonderful fair to the eye of them that saw her near. *Phidias* contrariwise (being skilful in all Arts, chiefly the *Opticks*) considering that the whole shape would change according to the height of the place, made her lips wide open, her nose somewhat out of order, and all the rest accordingly, by a kind of resupination; the two Images being brought to view, *Phidias* was in great danger to have been stoned by the multitude, until at length the Statues were set up; where the sweet and excellent strokes of *Alcamenes* were drowned; and the disfigured, distorted hard-favouredness of *Phidias* his work vanished (and all this by the height of the place;) by which means *Alcamenes* was laughed at, and *Phidias* much more esteemed. Of like perfection is *Amulius* his *Minerva*, the Image of *Juno* in the temple of the Syrian goddess, the head of *Diana* exalted at *Chios*, made by *Bupalus* and *Anthermus*, *Hercules* in the temple of *Antonia*, &c. An Artificer, saith *Philostratus* in *Proœmio Iconum*, must understand the nature of a man throughly, to express all his manners, guise, behaviour, &c. he must discern the force in the constitution of his cheeks, in the turning of his eyes, in the casting of his eyebrows; in short, he must observe all things which may help the judgment; and whosoever is thus furnished will doubtless excel, and bring things to perfection; he then may easily paint a mad man, an angry man, a pensive man, a joyful man, an earnest man, a lover, &c. in a word, the perfection of whatsoever may possibly be conceived in the mind.

IV. *Continual observation of exquisite pieces (whether Artificial or Natural) nimble conceptions, and tranquillity of mind, are great means to bring Art to Perfection.*

The works of the Antients could never have been so exquisite in the expression of Passions, but by these means. How perfectly did *Zeuxis* paint the modest and chast

behaviour of *Penelope*; *Timomachus* the raging mad fit of *Ajax*; *Silanion* the frowardness of *Apollodorus*; *Protogenes* the deep pensiveness of *Philiscus*; *Praxiteles* the rejoycings of *Phryne*; *Parrhasius* a boy running in Armour; and *Aristides* his *Anapauomenos* dying for love of his brother. *Bodius* his Image of *Hercules* is of the same nature; *Themistius* shews us the true Image of feign'd friendship; *Agellius* a most lively Image of *Justice*; *Apelles* an admirable picture of *Slander*; thousands of examples more might be drawn out of ancient Authors to approve these things, if these may be thought not sufficient.

V. *This Perfection also lyeth in the truth of the matter, the occasion thereof, and discretion to use it.*

The most ancient and famous Painters did make much account of *Truth*, and had rather lose the neatness and glory of their pieces, than to endanger the truth of their story; which indeed is the great commendation of a Picture, for as much as *Lucian* saith, that nothing can be profitable but what proceeds from truth. *Occasion* also is a great matter; the Picture of *Bacchus* may here serve for an excellent example, whose passion of love was so clearly expressed therein; casting aside his brave apparel, Flowers, Leaves, Grapes, &c. Now in representing things truly according to the occasion, *discretion* ought to be your guide; for as in Tragedies, so also in Pictures all things ought not to be represented; let not *Medea* (saith *Horace in libro de Arte*) mutther her own children in the pesence of all the people; let not the wicked *Atreus* boil humane flesh openly; there are doubtless many things, which had better be left out, though with some loss of the story, than with the loss of modesty; wanton, unlawful and filthy lusts (though they may gain the vain title of wit, yet) they diminish not only the estimation of the workman, but

also

alſo the excellency of the work, debarring it of perfection. Precepts help Art much, in propounding unto us the right way; but where they fail, our wits muſt ſupply, by warily conſidering what is decent and convenient; for this Art requireth ſtudious endeavours, aſſiduous exercitations, great experience, deep wiſdom, ready counſel, veracity of mind, diligent obſervations, and great diſcretion.

VI. *To the former add Magnificence, which gives authority to things excellent.*

Great minded men are moſt of all given to entertain ſtately conceits; therefore an *Artizan* ought to be of a *magnanimous* nature; if not, yet that at leaſt he ought with a determined reſolution to aim at *magnificent* things. So it ſeems that nature did diſpoſe *Nicophanes* to a high ſtrain of invention; *Nicophanes* (ſaith *Pliny*, *lib.* 35. *cap.* 10.) was gallant and neat, ſo that he did paint *Antiquities* for *Eternity*, whereby he was commended for the magnificence of his work, and gravity of his Art. Such *Artificers* therefore as do bring any thing to perfection, muſt be of an exceeding great ſpirit, and entertain upon every occaſion great thoughts, and lofty imaginations; by this means they ſhall gain an everlaſting fame; but this is impoſſible (ſaith *Longinus*) for any who buſie the thoughts and ſtudies of their life about vile and ſlaviſh matters, to bring forth any thing which might deſerve the admiration of ſucceeding ages. If any *Artizan* be not naturally of ſo great a ſpirit, let him help himſelf by the reading of *Hiſtory* and *Poëſie*; *Hiſtory* cannot but inſpire a *magnanimous Spirit*, when ſhe repreſents to us ſo many rare exploits, and the examples of ſo many great, noble and valiant ſouls, who *throughout all ages*, in the midſt of moſt eminent dangers, have demonſtrated their vertues and ſpirits not only to thoſe preſent, but *all ſucceeding times*. *Poëſie* alſo being of a

haughty and lofty ſtile, doth much enlarge the mind, and from thence many excellent things are brought: The much admired *Elean Jupiter* which *Phidias* made, himſelf confeſſed to be formed after the Image of *Jupiter* deſcribed in *Homer*. From the ſame Poet did *Apelles* paint the Image of *Diana* among the ſacrificing Virgins. It is not the preſent age, but the ſacred memory of all poſterity, which gives unto us a weighty and durable crown of Glory.

VII. *Exact Analogy or proportion, not only advanced Art, but alſo brought it a degree nearer Perfection.*

Philoſtratus calls it *Symmetrie*, ſome *Analogy*, others *Harmony*; this is the appellation of the *Greeks*; what the Latins called it ſcarcely appears (as *Pliny* ſaith *lib.* 34. *cap.* 8.) yet words equivalent in power thereto are found, as *Congruence*, *equality*, and *Tully* (*libro prima de Officiis*) calls it *Agreement* and apt *compoſition*; *Vitruvius*, *Commodulation*; *Agellius* calls it a *natural competence*; *Quintilian* approves the word *Proportion*; by which ſaith *Plutarch* beautiful things are perfected: it is one of thoſe things which the moſt High uſed in the fabrication of the world (*Wiſd.* 11. 20.) *He hath diſpoſed all things in meaſure and number and weight.* The firſt giver of *Symmetrie* or *Analogy* was *Parrhaſius*, *Polycletus*, who was a diligent obſerver thereof; *Aſclepiodorus*, an exact practiſer thereof, whoſe admirer was *Apelles*, who eſteemed it to proceed out of ſome perfections in an *Artificer* ſurpaſſing in Art, and which is moſt apparent in naked and undiſguiſed bodies. *Strabo* ſaith, that *Phidias* exactly obſerved this proportion in the Image of *Jupiter Olympicus* ſitting. The ſame *Phidias*, as *Lucian* reports, could exactly tell upon the firſt ſight of a Lions claw, how big a Lion he was to make in proportion to the ſame claw. Lineal Picture is the foundation of all imitation, which if it be done after the true rules

of

of proportion, will lively repreſent the thing delineated: this is a perfection in kind, which yet cannot be compared to the perfection of a coloured Picture.

VIII. *This point of Perfection was further advanced by the exquiſiteneſs of Colouring.*

The perfection of Colouring ariſeth from a certain right underſtanding of each colour ſeverally, without which it is impoſſible to mix any thing rightly, as *Hermogenes* ſaith. The *Greeks* (as *Porphyrius*) call this mixtion of colours, *corruption*, which word *Plutarch* alſo uſed when he ſaid that *Apollodorus* (who firſt found out the *corruption* or way of ſhadowing in colours) was an *Athenian*. *Lucian* calls it *confuſion*, where he ſaith that by the Art of Painting, Images were made by a moderate *confuſion* of Colours, as white, black, yellow, red, &c. by which, as *Philoſtratus* ſaith in *Proœmio Iconum*, we know how to imitate the diverſities of looks in a mad man, in a ſad or cheartful countenance; the colour of the eye, as brown, gray or black; of the hair, as golden, ruddy, bright, or flaxen; of the cloaths, as cloth, leather, or armour; of places, as chambers, houſes, forreſts, mountains, rivers, fountains, &c. this is done by the accurate mixtion, due application, and convenient ſhadowing, as *Lucian* ſaith in *Zeuxide*; through the obſervation of light, ſhadow, obſcurity and brightneſs, as *Plutarch* will have it. For this cauſe, ſaith *Johannes Grammaticus*, is a white or golden Picture made upon a black ground. *Light* is altogether neceſſary, ſeeing there can be no ſhade without it: light and ſhadow cannot ſubſiſt aſunder, becauſe by the one, the other is apparent; for thoſe things which are enlightned ſeem to ſtick out more, and to meet the eyes of the beholder; thoſe which are ſhaded to be depreſſed. This ſame of light and ſhadow, *Nicias* the *Athenian* did moſt accurately obſerve; as alſo *Zeuxis*, *Polygnotus*, and *Euphranor*,

phrastor, as *Philostratus* saith in *libro secundo de vita Apollonii cap. 9.* *Apelles* painted *Alexander* as if he held lightning in his hand; *Philostratus* observed the same in the picture of an Ivory *Venus*, so that one would think it an easie matter to take hold of her; *Pausias* arrived to such an excellency in this, as scarcely any after could attain unto, as in the painted Oxe, saith *Pliny*, which he made inimitable. *Obscurity* or *Darkness* is only the duskiness of a deeper shadow, as *brightness* is the exaltation of light: if white and black be put upon the same superficies, the white will seem neareſt, the black farther off: this being known, to make a thing seem hollow, as a ditch, cave, cistern, well, &c. it is coloured with black or brown; and so much the blacker, so much the deeper it seems; extreme black representing a bottomless depth; but to make it rise, as the breasts of a maid, a stretched out hand, &c. there is laid round or on each side so much black or brown, as may make the parts seem to stick out by reason of the adjacent hollowness; *brightness* is sometimes used for necessity, but generally for ornament, (as in the pictures of *Angels*, *Gems*, *Armour*, *Flame*, *Flowers*, *Gold*, *and the like*) the which is made alwayes with a mixture of light; which mixtion Painters call *Harmoge*, but is nothing else save an undiscernible piece of Art, by which the *Artizan* stealingly passeth from one colour into another, with an insensible distinction; this *Harmoge* is most perfect in the *Rainbow*, which containing evident variety of Colours, yet leaves them so indistinguishable, as that we can neither see where they begin, nor yet where they end, as *Boetbius* observes in *libri quinti de arte musica capite quarto.* The last and chief perfection of colouring lieth in the out-lines, or extremities of the work, being cut off with such a wonderful subtilty and sweetness, as to present unto us things we do not see, but that we should

believe

believe that behind the pictures, there is something more to be seen, than can easily be discerned; thereby setting forth, as it were, those things which are really concealed; this was *Parrhasius* his chief glory; but herein *Apelles* exceeded all others whatsoever, as *Petronius in Satyrico* seems to affirm.

IX. *Action and Passion is next to be considered, in which consists life and motion.*

There is not any thing that can add a more lively grace to the work, than the extreme likeness of motion, proceeding from the inward Action or Passion of the mind. It is therefore a great point of Art, which leads unto *Perfection*, the which we are to learn by casting our eyes upon nature, and tracing her steps. Consider all the gestures of the body, as the head, by which is expressed the affections of the mind. The casting down of the head, sheweth dejection of mind; being cast back, arrogance; hanging on either side, languishing; being stiff or sturdy, churlishness: by it we grant, refuse, affirm, threaten; or passively are bashful, doubtful, sullen, envious, &c. by the motions of the Countenance appears sorrow, joy, love, hatred, courtesie, courage, dejection, &c. by the motions of the countenance, are exprest the qualities of the mind, as modesty and shamefastness, or boldness and impudence; but of all the parts of the countenance, the eyes are most powerful, for they, whether we move or move not, shew forth our joy or sorrow; this is excellently exprest by the Prophet, *in Lam.* 3.48. פלג־מים תרד עיני על שבר בת עמי *palge majim terad gneni, gnal sheber bat gnammi*; which *Tremellius* renders, *Rivis aquarum perfluit oculus meus, propter contritionem filiæ populi mei*: and again עיני נגרה ולא תדמה *gneni niggerah velo tidma*, i. e. *oculus meus defluit nec desistit*. For the same purpose it is that nature hath furnished

niſhed them with tears; but their motion doth more eſpecially expreſs the intention, as meekneſs, pride, ſpitefulneſs, and the like; all which are to be imitated, according as the nature of the action ſhall require, as ſtaring, cloſed, dull, wanton, glancing, asking or promiſing ſomething. The *eyebrows* alſo have ſome actions, for they chiefly command the fore-head by contracting, dilating, raiſing and depreſſing it; wrinkled brows ſhew ſadneſs and anger; diſplayed, chearfulneſs; hanging, ſhame, elation, conſent; depreſſion, diſſent, &c. The *Lips* ſhew mocking, ſcorning, loathing, &c. The *Arm* gently caſt forth, is graceful in familiar ſpeech; but the arm ſpread forth towards one ſide, ſhews one ſpeaking of ſome notable matter; without the motion of the *hands* all motion is maimed: The hands as it were *call, diſmiſs, threaten, requeſt, abhor, fear, ask, demand, promiſe, deny, doubt, confeſs, repent, number, meaſure, rejoice, encourage, beſeech, hinder, reprove, admire, relate, commend,* &c. In admiration we hold the hand up, bent ſomewhat backward, with all the fingers cloſed: In relating we join the top of the forefinger to the thumb-nail; In promiſing we move it ſoftly: In exhorting or commending, more quick: In penitence and anger, we lay our cloſed hand to the breaſt: We cloſe the fingers ends, and lay them to our mouth when we conſider, &c. It is not yet enough that the Picture or Image reſembles the proportion and colour of the life, unleſs it likewiſe reſembles it in the demeanour of the whole body; therefore *Calliſtratus* calls this Art, the art of counterfeiting manners. *Ulyſſes* is evidently, ſaith *Philoſtratus*, diſcerned by his auſterity and vigilancy; *Menelaus* by his gentle mildneſs; *Agamemnon* by a kind of Divine Majeſty; *Ajax Telamonius*, by his grim look; *Locrus* by his readyneſs and forwardneſs. The beſt Artiſts ever change

their

their hands, in expreſſing of *Gods*, *Kings*, *Prieſts*, *Senators*, *Orators*, *Muſicians*, *Lawyers*, &c. *Zeuxis* painted the modeſty of *Penelope*: *Echion* made a new married but ſhamefaced woman: *Ariſtides* painted a running Chariot drawn with four horſes: *Antiphilus* made a boy blowing the fire: *Philoxenus Eretrius* depicted the Picture of Wantonneſs: *Parrhaſius* made the *Hoplitides* or Pictures of two armed men, as may be ſeen in *Pliny lib.* 35. *cap.* 9, 10, and 11. *Boëthius* made a babe ſtrangling a gooſe: *Praxiteles* made a weeping woman, and a rejoicing whore: *Euphranor* drew the picture of *Paris* as a Judge, a wooer and a ſoldier: See *Pliny lib.* 34. *cap.* 8. where you may have many other examples. It is worth our pains to ſee in *Calliſtratus* theſe deſcriptions at large, whereby we may ſee it is a ſingular *Perfection of Art.*

X. *The laſt ſtep of Perfection is the right ordering and diſpoſing of things.*

This order or diſpoſition muſt be obſerved as well in a picture conſiſting of one figure, as in a picture of many figures. The nature of man, ſaith *Xenophon in Oeconomico*, cannot name any thing ſo uſeful and fair, as order; a confuſed piece of work cannot deſerve admiration; thoſe things only affect us, wherein every part is not only perfect in it ſelf, but alſo well diſpoſed by a natural connexion. It is not enough in a building to bring hair, lime, ſand, wood, ſtones, and other materials, unleſs we take care that all this confuſed ſtuff be orderly diſpoſed to the intent. *Nature* it ſelf ſeems to be upholden by *Order*, and ſo are all things elſe which are ſubjugated to the ſame Law. Now the way to attain to this true *order of diſpoſition*, is *firſt* to conceive the *Idea* of the hiſtory in the imagination, that the preſence of the things in the mind may ſuggeſt the order of diſpoſing

ſpoſing each thing in its proper place, yet with that ſubtilty that the whole may repreſent one intire body. *Secondly*, that the frame of the whole ſtructure of this diſpoſition, may be analogous to the things themſelves; ſo that we may at once repreſent things which are already done, things which are doing, and things which are yet to be done; perfecting, as *Philoſtratus* ſaith, in every one of theſe things, what is moſt proper, as if we were buſied about one only thing. *Thirdly*, an hiſtorical Picture muſt repreſent the ſeries of the hiſtory, which although the Picture be ſilent, yet that the *connexion* might (as it were) ſpeak, putting the principal figures in the principal places. *Fourthly*, the parts muſt be connected eaſily rolling on, gently flowing or following one another, hand in hand, ſeeming both to hold and be upheld, free from all abruption, well grounded, finely framed, and ſtrongly tyed up together; that the whole may be delightſome for its equality, grave for its ſimplicity, and graceful for its univerſal analogical compoſure. *Fifthly*, that moſt excellent pieces (if the hiſtory will ſuffer it) be ſhadowed about with rude thickets, and craggy rocks, that by the horridneſs of ſuch things, there may accrew a more *excellent grace* to the principal; (juſt as diſcords in Muſick make ſometimes concords) from whence reſults a ſingular delight. *Sixthly*, that to theſe things be added *perſpicuity*; which, as *Lucian* ſaith, through the mutual connexion of things, will make the whole complete and perfect. *Seventhly* and laſtly, that the *diſpoſition of the proportion* be obſerved, in the due diſtance of each figure, and the poſition of their parts, of which we have ſaid ſomething, Section ſeventh; but in general *Pliny* (*lib.* 35. *cap.* 10.) ſaith, that in this general diſpoſition of proportional diſtances, we have no rules; our eye muſt teach us what to do; to which

Quintilian

Quintilian aſſents, where he ſaith, that theſe things admit no other Judgment, but the judgment of our eyes.

XI. Laſtly, *For the abſolute Conſummation or Perfection of the Art, excellency of Invention, Proportion, Colour, Life and Diſpoſition, muſt univerſally concur, and conſpire, to bring forth that comly gracefulneſs, which is the very life and ſoul of the work, the intire and joint Summe of all perfections.*

It is not enough, that a Picture is excellent in one or more of the aforeſaid perfections, but the conſummation is, that they all concurr; for if but one be wanting, the whole work is defective. A good invention affects the mind; true proportion draws the eyes; lively motion moves the ſoul; exquiſite colours beguile the phantaſie; and an orderly diſpoſition, wonderfully charms all the ſenſes; if all theſe unite, and center in one piece, how great an excellence and perfection will appear? *What a comely Grace?* this *Grace* it is, which in beautiful bodies is the life of beauty, and without which, its greateſt accompliſhments cannot pleaſe the beholder. For it is not ſo much the perfection of Invention, Proportion, Colours, Motion and Diſpoſition apart, which affect the ſenſes; but *all thoſe perfections* abſolutely *united*, which brings forth that comely *Grace*, and *higheſt Perfection*, which Art aims at, and the Artizan ſtrives after. This *Grace* proceeds not from any rules of Art, but from the excellent ſpirit of the Artificer; it is eaſier attained by obſervation and a good judgment, than learn'd by Precepts, as *Quintilian* in his Inſtitutions *lib.* 11. *cap.* 1. learnedly obſerves. And this *Grace* is moſt *graceful*, when it flows with facility, out of a free Spirit, and is not forced or ſtrained out with labour and toil, which quite

ſpoils

spoils and kills the life of the work: Now this facility springs from Learning, Study and exercitation. *Art* and *Nature* must concurr to the Constitution of this *Grace*; *Art* must be applied discreetly to those things which we *naturally* affect, and not to things which we loath; lest we miss of *that Glory* which we seek after.

Errata sic emendanda.

PAg. 11. l. 10. read prints: p. 29. l. 29. r. V: p. 43. l. 25. r. II: p. 57. l. 1, r. Chap. XXIII: p. 60. l. 5. r. VI: p. 60. l. 29. r. XI: p. 61. l. 32. r. VII: p. 110. l. 30. r. IV: p. 119. l. 29. read, the nightly bear: p. 139. l. 7. r. XV: p. 141. l. 10. r. II: p. 141. l. 26. r. X: p. 156. between l. 8, and 9. r. IV. Another for the same: p. 165. l. 1. r. Chap. XVIII: p. 184. l. 22. r. VII: p. 203. l. 16. r. IX: p. 162. between l. 18. and 19. r. III. By some he is thus described: p. 268. l. 26. r. VII: p. 268. l. 32. r. VIII: p. 271. l. 6. r. V: p. 277. l. 5. r. VI: p. 279. l. 16. r. Saffarel: p. 292. l. 27. and 28. are transposed: p. 296. l. 31. r. XIV: p. 309. l. 1. r. are two only: l. 2. and they are Antimony and Sulphur: p. 312. l. 25. well Perfume: p. 329. l. 3. Spirit of Urine.

FINIS.

INDEX.

A.

Angles and Arches 5, 65
Antique 40, 223
Arnus a river 51
Achelous, a river 52
Aurora 55, 138
Auſter, a wind 57
April 58
Auguſt 58
Appearances to deſcribe 60
Active part perſpect. 61
Altitude 62
Aqua fortis 81, 82
Aqua fortis to uſe 86, 91
Arſenick 98
Aſh-colour 100, 128
Azure 103, 133
Argentum muſicum 106
Aurum muſicum 107
Armour 116
Apollo 136
Aſtrea 138
Æneas 140
Alexander 140, 277
Arts to paint 142
Arithmetick 142
Aſtronomy 142
Audacity 144
Amel what 166, 168, 193
Amethyſts artificial 191
Amber artificial 192, 193
Azure to make 194
Azure colour to dye 203
Apelles 211, 214, 215, 280, 287, 346
Analogy 219, 344
Amethyſt colour 229
Azure colour 229
Aſtarte 241
Apollo to depict 247
Aurora to depict 255
Æolus to depict 260
Atropos 265
Aratus to depict 276
Ariſtotle 276
Adeps roſarum 330
Aqua Nanſa 312
Aqua Moſchata 312
Animal Perfume 328
Antimonial Perfume 329
Adulteration of Musk 329
Artificial pearl 335
Alcamenes 340
Action 347

B.

Brows 9, 11
Body to draw 18
Body naked 21
Breaſt 25
Birds to draw 35
Beaſts to draw 35
Boreas, a wind 57
Broken radiations 62
Burniſhing Iron 73
Bruſh pencil 81
Burniſher 82
Blacks 96, 124, 129, 131, 165
Blews 96, 103, 124, 128, 129
Bole armoniack 98
Blew bice 99
Bay colour 100
Blew azure 102
Black ſattin 104
Burniſhed gold and ſilver 105
Browns 124, 151

Black complexion 127
Buff colour 130
Bacchus 137, 267
Beza 141
Brazil 147
Buildings 153
Blackneſs to take away 160
Buckthorn berries 162
Braſs to make 169, 173
Braſs to tinge 173
Braſs to whiten 173
Braſs to cleanſe 176, 178
Bruſhes 185
Braſs to gild 196
Books to gild 197
Bones to dye 165, 169, 202
Bones to ſoften 203
Brown dye 205
Blew dye 205, 206, 207
Bow-dye 208
Banqueting rooms 224
Bed-chambers 224
Bacchus to depict 267
Bulls gall 292
Beautifyers which paint not 293
Beroſus 284
Burning and ſcalding 301
Breath ſtinking 303, 304
Baldneſs 305
Balſam odoriferous 321
Balſamum Moſchatum 321
Bracelets 323
Burning Perfumes 327
Black Ink 332
Black Sealing wax 335

C.

Comatice 1
Charcoals 2
Compaſſes 3
Circle 4, 65
Cone and Cylinder 5
Concord 47
Calumnia 49
Clio, ode of the Muſes 55
Calliope 56
Catoptrica, what 60, 67
Centre 65
Croſet to delineate 65
Chiromantical Signatures 68
Cuſhion 73
Copper plates to poliſh 74, 80
Copies to imitate 77
Colouring 345
Colours 93, 95, 97, 100, 124
Ceruſe 97
Crimſon 101, 128
Crimſon lake 101
Colours for Drapery 103
Carnation 104, 128
Cloth of gold 104
Colours to prepare 108
Colours to grind 108
Colours to keep 109
Colours to temper 109, 151
Colours to calcine 109
Colours their ſignification 125
Colours to fit for Painting 126
Complexions 126
Colours for Velvet 127
Colours for Sattins 129
Colours for Taffatie 130
Colours for Cloth 130
Colours for Leather 130
Colours for garments 130
Colours for Metals and Stones 132
Colours for Landskip 133, 153
Cupid 137
Ceres 138
Charity 142
Concord 143
Confidence 143
Colours for glaſs 144
Colours for waſhing 147
Cochenele 148, 161, 162, 163
Colour to take away 164, 167
Coral 165
Copper 166, 167
Copper to tinge 174
Copper to whiten 174, 175
Copper to ſoften 175
Caſting, the way 185
Caſting Trough 183
Crucibles 184
Cryſtal to melt 188
Cement for glaſſes 188
Calcydon artificial 190
Carbuncle artificial 191
Chryſolite artificial 191
Corals artificial 191
Cloths to dye 207
Crimſon dye 208
Choice of copies 221
Chambers 223, 224
Colens earth 227
Cherry-ſtone black 227
Caduceus, what 250
Charon to depict 264
Cloths 265

Chryſippus 276
Coſmetick of crabs 293
Coſmeticks 293
Coſmetick of pearl 296
Coſmetick of Myrrh 297
Chops to heal 301
Cyprian powder 318
Candles perfumed 327
Civet to adulterate 330
Cloth to perfume 330
Conſummation of theſe Arts 339

D.

Drawing, what 1
Drawing in general 4
Drawing of the face 7
Diſtance of its parts 9
Drapery 30
Diapering 40
Draught of a Picture 41
Demogorgon 44
Deſtiny 47
Diſſimulation 49
Danubius, a river 52
Dryades 54
December 59
Direct radiation 60
Dioptrica, what 61,67
Diſtance in perſpect. 63
Diagonals 64
Deep purple 109
Diapering on gold or ſilver 107
Defects to help 109
Drapery to Limn 116
Diamonds to Limn 116
Diana 138,252
David 140
Dido 148
Diamonds artificial 189,190
Diſpoſing of Pictures 223,349
Dining rooms 224
Deſign 226
Dead colour 231
Diana to depict 252
Diana's Nymphs 253
Diogenes 276
Democritus 276
Darkneſs 343

E.

Eyes 9, 11
Ear 13
Extreme parts to draw 15
Envy to expreſs 23,49,142
Eternity 44, 142
Equality 46
Euterpe, one of the Muſes 51
Erato, one of the Muſes 56
Eurus, a wind 57
Engraving 76
Engraving wood 78
Etching 80,85 90
Etching Varniſh 82
Etching needles 82
Emeralds to Limn 117
Eaſſe 121
Eccho 123
Emperors 140
Elizabeth Regina Angliæ 141
Empedocles 141
Eraſmus 141
Experimental obſervations 160
Emerald artificial 192
Emerald colour 228,229
Epicurus 276
Euclid to depict 276
Eſſences perfumed 315
Eſſence of Musk 315
Eſſence of herbs, ſalts 316

F.

Feathers 2
Fourth praxis of Drawing 5
Fifth praxis of Drawing ib.
Feet 15
Fear to expreſs 23,275
Flowers to draw 30
Fate 45
Fortune 45,269
Fame 47,274
Felicity 49,142
Fruitfulneſs 49
February 57
Foundation of Chiromancy 68
Figures upon wood
Frame for etching 83
Flame colour 102
Feathers 103
Fire colour 105
Fair complexion 126
Face to paint 134
Flora 138
Faith 142
Fuſtick berry 149
Flory blew 149
Fleſh colour 151
Flask what 184
Furnace 184
Freſcoe 239
Faunes and Fairies 263
Fucus to paint the Face 291

Freckles 299

G.

Ganges a river 51
Galatea a Nymph 54
Glass 63
Graving 72
Gravers 72
Gravers to make 74
Graver to hold 75
Gums 93,94
Green colours 96,129,131
Green bice 98
Glass grey 100
Grey 100
Green 102,103,104,124,133,149,150
Gold cloth 104
Gold liquid 105,147
Gold armoniack 107
Grinding stone 110,123
Gold armour 116
Gold colour 132
Graces 138
Gustavus rex Sueciæ 140
Geometry 142
Government 142
Glass to paint 144,145,168
Gambogia 148
Glass of Antimony 166
Gold 168, 169
Gold to soften 171
Golden tree 181
Glass to make 189
Gilding 195
Glass to gild 195,197
Green dye 206, 207
Galleries 224
Glaucus to depict 260
Galatea to depict 260
God the Author of these Arts 277
Gloves to perfume 331
Green Ink 333
Gracefulness 351

H.

Hair 13
Hands 15
Humane proportion 28
Hercules 48
Hope 48
Horizontal line 63
Holding the Graver 75
Hard etching varnish 80
Hair colour 104,128,129,131
Hymen 137
Hope 142
Hope 142
Honour 144,273
High wayes 153
Hills 153
Horns to dye 165,169,204
Horns to soften & cast 203,204
Hall 223
Honour to depict 273
Harpocrates to depict 275
Heraclitus to depict 276
Hands swoln 302
Hair to beautify 305
Hair to take away 306
Hair to curl 306
Hair powder 320
Harmoge 346

I.

Instruments of Drawing 2
Insects to draw 36
Justice 49, 143
Injury 49
Indus a river 51
Iris a Nymph 54
January 57
June 58
July 58
Judgment whence 60
Ichnographia 61
Jupiters signification 69
Instruments of Graving 72
Imitation of prints 77
Instruments of Etching 80
Instruments of Limning 93,110
Indico 99,150
Iron colour 132
Jupiter 136
Juno 138,256,257
Innocency 143
Jollity 143
Impudence 144
Joy 143
Iron to tinge 175, 177
Iron to whiten 176
Iron to keep from rust 176
Iron to soften 176
Iron to solder 177
Instruments of Casting 183
Jacynth artificial 191
Iron to gild 195, 198
Ivory to soften 203
Ivory to whiten 204
Invention 219
Imitation 225
Ivory black 227
Indian lake 228

Infants to paint 237
Jupiter to depict 242
Janus to depict 254
Juice of Macaleb 326
Ink to make 331

K.

Kali an herb 189
Knives to gild 196
King Amasis 283
King Perseus 283
King Attalus 284

L.

Love to express 28
Leaves of trees to express 36
Landskip 37,66,223,225
Line, what 59
Linea Jovialis 68
Linea Saturnalis 68
Linea Solaris 68
Linea Mercurialis 68
Linea Lunaris 68
Linea Stellata 68
Luna her signification 70
Letters 78
Limning 93, 113, 230
Liquid gold and silver 93, 105, 147
Lamp black 97
Litmos blew 99
Light green 100
Lead colour 101
Lake to make 101
Light blew 104
Leaves of trees to colour 105
Limning instruments 110
Light to chose 113
Limning drapery 116
Limning Landskip 117, 235
Leather colour 130
Landskip colours 135,153
Law 143
Love 143
Laughter 143
Liberty 144
Logwood 147, 163
Litmos 149,163
Lapis Lazuli 159
Lignum Nephriticum 161,163
Liquor to make colourless 164,167
Lapis Calaminaris 169
Lead to purge 178
Lead to tinge 178,179
Linnen to gild 197
Leather 199
Letters silver 199
Linnen to dye Brown, Blew, Red, Rasset, Purple, Yellow, Green 205
Luna to depict 252
Lachesis 265
Liquor of Talk 293
Lac Virginis 296
Lamp perfumed 327
Life 347

M.

Mouth 9,11
Mixed forms 35
Meray 49
Mountain Nymphs 53
Melpomene 55
Months 57
March 57
May 58
Magnitude, what 59
Mensa 68
Mars's signification 69
Mercury's signification 70
Materials of Etching 80
Masticot 98
Mixt colours 100
Murry 100,102
Molstick 122
Metal colours 132
Mercury 136
Minos, Momus 137
Moses 140,276
Mahomet 140
Modesty 143
Madder 148
Mixing of colours 151
Marble to imitate 158
Mineral experiments 165
Mercurius Vitæ 165
Metals 170
Metals to colour 180
Metals to melt 183
Medals 184
Matter of Gems 189
Metals to gild 198
Maremaids 221
Murus colour 229
Mars to depict 244
Mars his court and house 245
Mercury to depict 250
Minerva to depict 265
Magistery of Pearl 291
Morphew to cleanse 294
Mercurial Cosmetick 295
Marks and Scars 305
Matter of Perfumes 308

Muſcardines red 321
Masked Soap 326
Macaleb juice 326
Mineral perfume 329
Musk to adulterate 329
Magnificence 343
Motion 347

N.

Noſe 9,11
Naked body 21,238
Nilus, a river 50
Niger, a river 53
Nymphs 53
Napæa 53
Naiades, Nymphs 54
November 58
Needles to etch with 82
Needles to whet 82
Neptune 137
Night 138,274
Numa 140
Natural affection 243
Nereides 221
Nymphs of Diana 253
Neptune to depict 259
Nemeſis to depict 261

O.

Oval 4
Outſtrokes 13
October 38
Optice 59, 60
Orthographia 61
Object 64
Oil ſtone 73
Oil prepared 81
Orpiment 98
Oker de luce 99,2[illegible]7
Orchal 100
Orange colour 129,131,149
Old paints to cleanſe 136
Opinion 143,274
Oil of flints 182
Original of Painting 211
Original colours 228
Old bodies to paint 238
Ops to depict 258
Oceanus to depict 260
Oil of Camphire 291
Oleum Tartari 296
Ointment Coſmetick 296,297
Oil of Ben 309
Oleum Imperiale 313
Oil of Cinnamon 313
Oil of Roſes 313
Oil of Calamus Aromaticus 314
Oil of Rhodium 314
Oil of Benjamin, Storax 314
Ointments perfumed 317
Orrice powder 319
Odoriferous Balſam 321

P.

Polygraphice, what 1
Pictura 1, 219
Pencils 3,110,122,147
Pens 3
Paſtils to make 3
Precepts of Drawing 4
Polygon 5
Paps 25
Paſſions to expreſs 28, 347
Picture to extend or contract 43
Powers to expreſs 44
Peace 47,273
Providence 47
Piety 48
Penitence 49
Po or Padus, a river 52
Polyhymnia 56
Perſpective 59
Practice thereof 64
Perſpective figure 66
Plates to poliſh 74, 80
Prepared oil 81
Pink yellow 98,227
Purple 100,102,103,128,129,131,169
Popinjay green 104
Peach colour 105
Preparation of colours 108
Preparations for Limning 111
Practice of Limning 113
Pearls to Limn 116
Pictures to Varniſh 118
Painting in Oil 121, 225
Palfet 122
Primed cloth 122
Pear colour 132
Painting the Face in oil 134
Painting of the Antients 136
Pluto 137
Pallas 138
Proſerpine 138
Pythagoras 141
Philoſophers to paint 141
Paſſions to paint 142
Peace 143
Pleaſure 143
Paſtime 143
Printers black 147

Practice of Washing 154
Putty what 168
Pipe for casting 184
Preeious stones to counterfeit 188
Pearls artificial 190, 335
Preparat. & proport. of mineral colours 193, 194
Paper, Parchment, 199
Purple dye 206, 208
Proportion 219, 344
Porch 223
Phœbus to depict 246
Pan to depict 262
Pluto to depict 263
Parcæ to depict 265
Pallas to depict 265
Peace to depict 273
Progress of these Arts 277
Phidias 286, 287, 340, 344
Painting the Face 288
Pimples 298
Perfuming in general 307
Perfuming waters 310
Perfuming oils 313
Perfuming essences 315
Perfuming unguents 317
Pomatum 317
Perfuming powders 318
Pulvis Calami Aromatici 320
Perfuming Balsams 320
Perfuming tablets 321
Pomanders 323
Perfuming Wash-balls 324
Perfuming soaps 225
Perfumes burning 327
Perfumes animal 328
Perfume of Sulphur 329
Printers Ink 334
Perfection of Painting 339

Q.

Quicklime 162
Quicksilver 167
Quicksilver to harden 170
Quicksilver to tinge 171
Quintilian 213, 214, 344

R.

Rulers 9
Rivers 50
Radiation, what 60
Radiation reflected 60
Red colours 96
Red lead 97, 228
Rosset 97
Russet Sattin 104
Russet to shadow 104
Rubies to Limn 117
Religion 143
Rocks 153
Red Varnish 157
Ruby artificial 190
Red dyes 206, 208
Russet dye 206
Ruby colour 228
Red fucus 292, 293
Redness & Pimples 298
Ring worms 300
Red tablets 321
Red Ink 343
Right ordering 349

S.

Square 4
Second practice of Drawing 5
Shadowing the face 13
Shadowing a naked body 25
Shadowing, the rules 26
Sun to express 37
Security 49
Superficies, what 59
Solid what 60
Scenographia 61, 62
Subject to be seen 62
Section, what 63
Saturns signification 69
Sols signification 69
Soft Varnish to etch with 81
Soft Varnish to use 89
Spanish white 90
Sinaper lake 97
Spanish brown 98, 227
Sap-green 98
Saffron 98
Smalt 99
Saffron colour 100
Scarlet colour 101, 103
Sattin black 104
Sattin white 104
Silk 104
Sky colour 104, 133
Straw colour 105
Silver liquid 105, 188
Size for burnishing gold 107
Shadows for colours 110, 151
Shells 111
Sitting 113
Saphire to Limn 117
Straining frame 122
Size for primed cloth 123
Shadows in colours 126, 127
Swarthy complex. 128
Satin colours 129
Silver colour 132
Sibyls to paint 141
Soul 142
Safety 144
Saffron 145
Stone colours 151
Sublimate 166, 167
Silver 165, 167, 168
Silver to soften 172
Silver to tinge 172
Silver to blanch 172
Silver to calcine 173
Steel to soften 177
Silver to counterfeit 177, 178, 180
Solder for silver, brass, or Iron 180
Silver tree 181
Steel tree 182
Sand 183
Skrew to cast with 184
Saphire artificial 191
Silver to gild 196
Steel to gild 196, 198
Silk to gild 197
Skins to dye 200, 201
Spots to take out 207
Stuffs to dye 207
Silks to dye 207
Scarlet dye 208
Stair-case 223
Summer-houses 224
Saturn to depict 240
Sol to depict 246
Signum posts 250
Sylvans & Satyres 263
Staphills

Staphilis 269
Sleep to depict 274
Sperates 276
Skin to paint 288
Scurf to take away 284
Sun-burnings 298
Spots, Scurff 299
Sweet-breath 303,304
Sweet waters 310,311
Soap 325
Soap musked 326
Skins to perfume 330
Sealing wax 334
Symmetrie 344
Sum of all Perfect. 351

T.

Triangle 5
Third pract. of Draw. 5
Time 45
Tyber, a river 50
Tygris, a river 51
Thamesis, a river 51
Thetis, a Sea Nymph 54
Thalia one of the M. 55
Terpsichore 56
Trough 83
Turnsole 97,147
Table to prepare 111,235
Tawny compl. 127,128
Taffaty colour 130
Triton 137,221
Tellus 138,258
Tortoise shell 158,159
Tin 167
Tin to harden 179
Tripoli 184
Tongs 184
Topas artificial 191
Tin to gild 198
Terra Lemnia 217
Topas a yellow col. 230
Truth to depict 213
Tetters 300
Teeth defective 303
Tablets red, yellow 321
Truth of the matter 342

V.

Uncertain forms 6,35
Victory 46
Vertues and Vices 48
Urania one of the M. 56
Visual point 62
Visual Rayes 64
Venus significat. 70
Use of the Oil-stone 73
Varnish hard to etch with 80
Varnish soft 81
Using the hard Varn. 83
Varnish soft to use 89
Vermilion 97,101,168
Verdigriese 98,148,228
Verditure 98
Umber 99,227
Ultramine 99
Violet colour 100, 102
Velvet 103, 127
Vulcan 137
Venus 138
Urania 138
Vesta 138
Vertues to paint 142
Unanimity 143
Varnish to make 155,156
Varnish for Metals 156
Varnish common 157
Universal Varnish 157
Vegetable colours 160
Velvet Crimson 219
Ultramar. to make 230
Various forms of Colouring 237
Virgins to paint 238
Venus to depict 246
Virgins of Diana 253
Vulcan to depict 266
Vertue to depict 272
Voluptia to depict 275
Uses of Painting 281
Value of Pictures 284
Unguentum Mosch. 317
Venetian Soap to purify 325

W.

Whole body 13
Wood Nymphs 54
Winds 57
Way to engrave 76
Wood to engrave 78
Way of etching 85,90
Work to finish 88,91
Whites 95,124,129
White lead 97,228
Walnut colour 105
Washed colours 108
Whiting to make 123
Wood colours 133
Wisdom 143
Watchfulness 143
Wit 143
Washing 146
Water 153
Way of Varnishing 158
White Arsnick 169
Way to gild 195
Woods to gild 197
Woods to dye 165,169
Women to paint 238
Walls to paint 239
Wrinkles 300
Warts 300
Wash-balls 324
Wax to make 334

X.

Xenocrates to dep. 276
Xylobalsamum 308
Xyloaloes 327

Y.

Yellow colours 96,124
Yellow pink 98
Yellow Velvet 128
Yellow Satin 129
Yellow garments 131
Yellow Varnish 157
Yellow wax to whiten 160
Yellow Orpiment 169
Yarn to dye 205
Yellow dye 205,207

Z.

Zephyrus, a wind 57
Zaphora to tinge glass 168
Zink to mix with Copper 169
Zeuxis 211, 214, 215 285,342
Zeusippus to depict 276
Zeno to depict 276
Zoologia 282
Zeodoary to chew 305
Zibeth 308

FINIS.